Please Note: These minutes are pending Board approval. Board of Education Newtown, Connecticut

Minutes of the Board of Education meeting held on June 27, 2023 at 6:30 p.m. in the Council Chambers, 3 Primrose Street.

D. Zukowski, Chair
J. Vouros, Vice Chair
A. Uberti
D. Ramsey, Secretary
T. Vadas
D. Cruson
3 Staff
A. Plante
3 Public
T. Higgins
1 Press

S. Tomai

Ms. Zukowski called the meeting to order at 6:30 p.m.

Item 1 – Pledge of Allegiance

Item 2 – Consent Agenda

MOTION: Mr. Cruson moved that the Board of Education approve the consent agenda which includes the correspondence report. Mrs. Plante seconded. Motion passes unanimously.

Item 3 - Public Participation - none

Item 4 – Reports

Chair Report: Ms. Zukowski spoke about graduation and welcomed Shannon Tomai and Todd Higgins, the two new Board members, who appreciated the opportunity to serve.

Superintendent's Report: Mr. Melillo spoke about the move back to Hawley School. A two-day program was conducted at the Community Center for Hawley students and he thanked Matt Ariniello and the district staff for help with bus duty. We are applying for a grant through the Primary Mental Health Program from the State Board of Education for \$20,000 each year for two years. This would be for a paraprofessional who will receive specialized training to address mental health needs of our students. We received funds from a Perkins Grant and purchased a food truck for the high school for automotive students to learn how to design and retrofit the truck.

Mr. Melillo noted that the switch gear for the Hawley HVAC project was delayed until August 14 so we will use alternative equipment to have the building up and running with 2/3 of the school being air conditioned. This is a result of issues regarding the supply chain.

Mr. Higgins questioned if there was any collaboration from industry for the food truck. Mr. Melillo said he was going to be collaborating with our food service vendors. This work will incorporate many courses in the high school.

Mrs. Tomai asked who would be paying for any needed equipment for Hawley School. Mr. Melillo stated there was money set aside if this were to happen so we have a \$50,000 contingency for the Hawley project.

Committee Reports:

Mrs. Plante reported that the CFF committee met last night and reviewed the financial report. We will start work on the CIP and give a full presentation to the Board in August.

Financial Report and Transfers:

MOTION: Mr. Cruson moved that the Board of Education approve the financial report and transfers for the month ending May 31, 2023. Mr. Ramsey seconded.

Mrs. Vadas presented the financial report and answered questions from the Board. Motion passes unanimously.

Item 5 – Presentations

Social Emotional Supports:

Anne Dalton spoke about social emotional health and well-being in the schools. She provided information on programs in the schools and data on various surveys conducted.

Mr. Higgins said in looking at the survey trends asked if the district has help regarding this information.

Mrs. Dalton reported that we work with the consultant on the survey results to present it in a meaningful way.

Mr. Melillo said that regarding the number of incidents in the schools, we have faculty and staff who will look at the data points and see how we can support our students. We have a set protocol on what we have to do but each child is different.

Mrs. Uberti said regarding the incident log, it also includes a record of a disciplinary event such as pushing another student. The categories are dictated by the state. It's been difficult to know how each administrator labels a disciplinary event.

Chartwells Update:

Mrs. Vadas introduced Jamie Davies, Chartwells district manager, John Morris, director of dining services, and support managers Bill Devoe and Judit Hajba. Mr. Davies gave an update on their food service. She noted that she witnessed the Reed School mood boost in action where they discussed how the food affected their brain. Every child participated. We are also going to look into the recycling program and there is a learning component with grants available.

Item 6 – Old Business

Second Read of Gr. 7 and 8 Kitchen Science Curriculum:

MOTION: Mr. Cruson moved that the Board of Education approve the Grade 7 and Grade 8 Kitchen Science Curriculum. Mrs. Plante seconded. Motion passes unanimously.

Item 7 – New Business

Action on Potential Standing Committee Assignments:

MOTION: Mr. Cruson moved that the Board of Education approve the revised Standing Committee Assignments. Mrs. Plante seconded. Motion passes unanimously.

Action on Connecticut Primary Mental Health Grant:

MOTION: Mr. Cruson moved that the Board of Education approve applying for the Connecticut Primary Mental Health Grant. Mrs. Plante seconded. Motion passes unanimously.

Discussion Regarding Tuition:

MOTION: Mrs. Plante moved to table the tuition discussion. Mr. Ramsey seconded. Motion passes unanimously.

Item 6 – Old Business continued

Strategic Plan Update and Possible Action:

Richard Lemons gave an overview of the process for the strategic plan and portrait of a graduate and spoke about the four district priorities and strategic actions and also how the plan will be used by the Board, the district, and school leadership teams, and how the Communications Committee will publish the plans.

Mr. Higgins referred to a graphic around social and emotional learning and was trying to track putting students on the path and how it translated into the strategic plan. He asked what the collaboration was on the plan in this area.

Mr. Lemons reported that there is evidence that points to the importance of social emotional development and skills necessary to thrive in the world and the core components of being academically successful in school. The planning committee recognized that this work was important. This was a strong set of assets for Newtown. It didn't need to be a fourth goal because of the progress that has been made.

Mr. Melillo said we acknowledge the social emotional component was important. This component needs to be woven into the curriculum pieces and we have been doing that. We have looked at data points and we have processes in place looking at data to ensure student needs are being met. We looked at where our needs were and where we had to improve to move our students to the next level.

Mrs. Uberti said it has been an intense focus the past decade. We try to build competencies in students to be able to do the things in the plan.

Ms. Zukowski stated that we have the strategic plan but we have to ensure that it will be successful.

Mr. Lemons agreed with Ms. Zukowski. All schools will be asked to look at the plan and build their school community tied to the data of the schools priorities. Schools will share their strategic plan and compare with other schools.

Mr. Melillo met with Mr. Lemons about having leadership teams regarding what goals will be made. At our administrators retreat we will discuss this and develop school improvement plans. Hopefully, the schools will have a working plan in place at the start of the school year.

Mr. Higgins said there is a reference to annual performance and asked if the benchmarks have been identified and goals to say this is where we are, this is where we want to be, and to assess where we are in the development of this plan.

Mr. Melillo noted that we aren't there right now. We had to have the Board approve the plan first. We want to have preliminaries around structures when we pull data and who will be on the teams.

Mrs. Tomai proposed to add a reference in priority #2 so it doesn't get lost in the portrait of the graduate.

Mr. Melillo said we've taken feedback from a multitude of people but we can approve the plan as is and come back with that in it. There's a nod to the DEI plan and we can add the Casel standards as a reference to the work we are doing.

MOTION: Mr. Cruson moved that the Board of Education approve the Newtown Public Schools Strategic Plan. Mrs. Plante seconded.

MOTION: Mrs. Tomai moved to amend the motion to add a reference to social emotional learning, specifically Casel and add a reference to social emotional learning, specifically Casel, in Priority 2, portrait of the graduate. Mr. Higgins seconded.

Mr. Cruson appreciated the amendment but feels this is such a foundational piece to the district it doesn't need to be spelled out in the plan. The Board does feel it's a priority but he was not in favor of adding the Casel framework as a bullet in the strategic plan.

Mrs. Uberti said it was important to not think of this as a checklist. The school teams come together to reflect the needs of their school. They should build action steps in their building. There may be other parts of the plans their goals are connected to. She liked to add the social emotional piece. There is funding for mental health and social emotional learning so it makes sense to put it in there.

MOTION: Mrs. Tomai moved to remove her amendment. Mr. Higgins seconded.

MOTION: Mrs. Tomai moved to amend the motion to add under Priority 2, Section 3, create a comprehensive plan to help all students achieve the portrait of the graduate, including an assessment process. The new language would be consistent with the social emotional learning standards of the Newtown Public School District. Mr. Vouros seconded.

Vote on amendment: 6 ayes, 1 nay (Mr. Cruson) Motion passes.

Vote on main motion: 7 ayes Motion passes unanimously.

Item 7 – New Business continued

Tuition Discussion:

Mr. Cruson said policy 5118 Nonresident or Tuition Students prescribes the percentage we charge for staff. If we want to change the percentage, it has to go to the Policy Committee.

Action on Minutes:

MOTION: Mr. Cruson moved that the board of Education approve the minutes of June 1, 2023. Mr. Ramsey seconded. Vote: 5 ayes, 2 abstained (Mr. Higgins, Mrs. Tomai) Motion passes.

MOTION: Mr. Cruson moved that the Board of Education approve the minutes of June 6, 2023. Mr. Ramsey seconded. Vote: 5 ayes, 2 abstained (Mr. Higgins, Mrs. Tomai) Motion passes.

MOTION: Mr. Cruson moved that the Board of Education approve the minutes of June 8, 2023. Mr. Ramsey seconded. Vote: 5 ayes, 2 abstained (Mr. Higgins, Mrs. Tomai) Motion passes.

<u>Item 8 – Public Participation</u> - none

MOTION: Mr. Cruson moved that the Board of Education go into executive session regarding the contract extensions for the Assistant Superintendent and Director of Business and the evaluation of the Superintendent and invite Mr. Melillo. Mr. Vouros seconded. Motion passes unanimously.

Item 9 – Executive Session

The Board entered executive session at 9:45 p.m. and returned to public session at 10:35 p.m.

Item 10 – Public Session

MOTION: Mr. Cruson moved that the Board of Education approve the one-year contract extension for the Director of Business. Ms. Plante seconded. Motion passes unanimously.

MOTION: Mr. Cruson moved that the Board of Education approve the one-year contract extension, 2.5% raise and \$1,500 Annuity Payment for the Assistant Superintendent, and move further that the Board Chairperson be authorized to finalize and execute the employment contract with Mr. Melillo for the period July 1, 2023 through June 30, 2026. Ms. Plante seconded. Motion passes unanimously.

MOTION: Mr. Cruson moved that the Board of Education extend the employment contract of Christopher Melillo as Superintendent of Schools, through and including June 30, 2026, and raise of 2.5%, and move further that the Board Chairperson be authorized to finalize and execute the employment contract with Mr. Melillo for the period July 1, 2023 through June 30, 2026. Ms. Plante seconded. Motion passes unanimously.

MOTION: Mr. Cruson moved to adjourn. Mr. Higgins seconded. Motion passes unanimously.

tem 11 – Adjournment The meeting adjourned at 10:37 p.m.	Respectfully submitted:	
	Donald Ramsey Secretary	

Correspondence Report 06/06/2023 – 06/26/2023

Date	Name	Subject
06/06/2023	Cruson, Daniel	Correspondence
		Report for the BOE
		Meeting 06/06/2023
06/06/2023	June, Kathy	Superintendent
	·	Evaluation
06/06/2023	June, Kathy	Executive Sessions
06/07/2023	Zukowski, Deborra	Update
06/07/2023	June, Kathy	June 8 Agenda
06/07/2023	Lisa St. Louis	Meeting minutes
06/08/2023	Zukowski, Deborra	Fwd: Tonight's
	,	Meeting
06/08/2023	Melillo, Christopher	Attendance
06/09/2023	Kiley Gottschalk	(no subject)
06/09/2023	Jess Celina	Thank you to the Board
06/10/2023	Wendy Leon-Gambetta	The Appointment of
11, 11, 112	Wellay Leon Gallibetta	New BOE Members
06/11/2023	Melillo, Christopher	6/11 Superintendent's
,,	Wiemo, emiscopher	Sunday Update
06/11/2023	Zukowski, Deborra	June 11 2023 Week in
00, 11, 2025	Zukowski, Deboita	Preview
06/12/2023	Carrie Grummons' via Newtown	Looking Ahead
00, 12, 2023	BOE	LOOKING ANEdu
06/13/2023	June, Kathy	Fwd: Attached Image
06/14/2023	Zukowski, Deborra	Update on Ankle
05, 2 1, 2025	Zakowski, Deboira	Surgery
06/14/2023	Melillo, Christopher	Feedback
06/15/2023	Zukowski, Deborra	Evaluations
06/17/2023	Zukowski, Deborra	BoE Vacancies
06/17/2023	Zukowski, Deborra	Fwd: Town Charter vs
00/1//2023	Zukowski, Deboira	Board Policy question
06/18/2023	Melillo, Christopher	6/18/2023
00/10/2023	Weillo, Christophei	Superintenden't Sunday
06/18/2023	Zukowski, Deborra	Update
00/18/2023	Zukowski, Deborra	June 18, 2023 Week in
06/10/2022	Zukovaki Dohowa	Preview
06/19/2023	Zukowski, Deborra	Interviews
06/19/2023	Kiley Gottschalk	BOF 6-21-23 Special
06/20/2022	Zulanudi D. I	Mtg.
06/20/2023	Zukowski, Deborra	Interviews
06/21/2023	Zukowski, Deborra	BOE Prep for next week
06/22/2023	June, Kathy	June 26 Agenda and
		Motions
06/22/2023	June, Kathy	BOE Mailing – June 27,

		2023
06/23/2023	Morris, Joanne	May 2023 Financial
		Report for BOE Mtng
		6/27/23
06/25/2023	Melillo, Christopher	6/25/23
00, 10, 1015	Wiemio, emistopher	
		Superintendent's
06/25/2022	+	Sunday Update
06/25/2023	Zukowski, Deborra	June 25, 2023 Week in
		Preview
06/26/2923	Zukowski, Deborra	Candidates information
06/26/2023	Zukowski, Deborra	New Board Members
06/26/2023	Michelle Embree Ku	New Board Members
	With the Ellistee Na	New Board Wichibers
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NEWTOWN BOARD OF EDUCATION MONTHLY FINANCIAL REPORT MAY 31, 2023

SUMMARY

The eleventh financial report for the year continues to provide year to date expenditures, encumbrances and information for anticipated obligations. Many of the accounts within our major objects have been forecasted as "full budget spend" in order to more accurately project an estimated year-end balance. These balances are monitored closely and adjusted each month in order to capture any changes and fluctuations that occur throughout the year.

During the month of May, the district spent approximately \$5.7M for all operations. About \$4.2M was spent on salaries with the remaining balance of \$1.5M on all other objects. Monthly expenditures appear to be within normal limits at this time.

The change over the last month's year-end projection has resulted in a decrease of -\$54,854 with a new estimated year-end balance of \$77,500.

Many of our accounts have now been adjusted to include anticipated expenses through year-end. This report also includes a transfer request in the amount of \$295,207 and has been included in this financial report for display. Once approved by the board, we will make the appropriate adjustments in our financial system. The transfer request also includes items from the 23-24 budget that are eligible for pre-purchase. This pre-purchase in necessary in order to provide funding for the shortfall in negotiated contractual salary obligations that begin on July 1st, 2023.

TRANSFERS

The total transfer request is for \$295,207 and we have broken this request into two parts. Requests for regular budget realignments and/or shortfalls are listed below along with the transfer request for pre-purchased items.

- \$56,140 from the vehicle fuel account to cover instructional and library supplies at Sandy Hook, Head O'Meadow, Middle School and Special Education. This transfer is all within the supply object (600);
- \$42,677 from the high school electric account to cover textbooks at Sandy Hook, Head O'Meadow, and curriculum. This transfer is all within the supply object (600).

Transfer request is \$98,817

The following transfer request is for the pre-purchase of chrome books. The cost for these items will be removed from the 2023-2024 budget and included in the current year. This transfer request is required in order to meet our negotiated contractual salary obligations that exceed the budgeted amount.

• \$101,276 from supervisor salaries plus \$95,114 from educational assistant salaries to cover technology equipment in the amount of \$196,390. This is a cross-object transfer, requesting to move the surplus in salaries (100) to cover the expenses in equipment (700)

Total transfer request for pre-purchased items: \$196,390

MAJOR MOVERS

SALARY OBJECT

The overall salary object currently displays a positive position of \$155,323, decreasing by \$372,186 over the prior month. Various adjustments have been made throughout these accounts for the anticipation of remaining substitute coverage as well as unfilled positions.

The non-certified salary accounts include the transfer request in the amount of \$196,390, reducing this object. Also included in this report are the transfer adjustments that were requested and approved last month totaling \$302,269.

EMPLOYEE BENEFITS

The overall benefit account has increased by \$44,246 over the prior month going from a negative -\$14,505 to a positive \$29,741. During the month of May, we analyze our FICA and Medicare projections which have now resulted in an additional \$19,604. We also reduced our anticipated unemployment costs which provided an additional \$20,437. This object is not in good standing.

PROFESSIONAL SERVICES

The object balance here has increased over the prior month by \$68,677 and still remains positive. Throughout the year, and for various reasons, we were unable to use all of the budgeted staff training dollars within this object. We also had some savings in our special education professional services (primarily student testing) which provided an offset for the overage we are experiencing in legal services.

In our legal account, we are projecting an overage of \$105,000. The majority of this overage is due to unanticipated contractual inquiries as well as other challenges.

OTHER PURCHASED SERVICES

The overall position of this object is displaying a negative balance of -\$339,066, which has decreased over the prior month by \$248,345. Changes that occurred this month were related to the April transfer request where we applied the SPED contingency of \$100,000 to cover the shortfall in out-of-district tuition and the transferring of BT salaries to cover the additional costs for BT contracted services.

SUPPLIES

The overall supply object is in good standing with a positive position of \$97,079, increasing slightly over the prior month. There are a few accounts within this object that remain in the red; such as, instructional supplies, medical and plant supplies. This was a result of the superintendent's 2023-24 budget adjustment and many of these items were purchased this year as they were required for programs, the health office and district wide cleaning supplies. These negative accounts were discussed and reviewed by the board in April's financial update.

EQUIPMENT

This object now shows a positive balance as it includes a request for the pre-purchase of technology equipment as well as a transfer request from our salary accounts to cover this purchase. Once approved by the board, we will encumber these funds.

REVENUE

The board of education received \$1,358.50 in tuition and \$927.96 in miscellaneous revenue.

Tanja Vadas Director of Business June 22, 2023

NEWTOWN BOARD OF EDUCATION 2022-23 BUDGET SUMMARY REPORT FOR THE MONTH ENDING MAY 31, 2023

OBJECT	CT EXPENSE CATEGORY	·· •	2022 - 2023 APPROVED BUDGET	YTD TRANSFERS 2022 - 2023	CURRENT BUDGET	YTD EXPENDITURE	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS		PROJECTED BALANCE	% EXP
	GENERAL FUND BUDGET											
100	SALARIES	649	53,701,233	\$ (132,875)	\$ 53,568,358	\$ 42,884,008	\$ 10,149,553	\$ 534,798	\$ 379,475	.75 \$	155,323	%12.66
200	EMPLOYEE BENEFITS	69	11,955,016	\$ 249	\$ 11,955,265	\$ 11,573,215	\$ 11,065	\$ 370,986	\$ 341,245	.45 \$	29,741	%52 66
300	PROFESSIONAL SERVICES	6/3	687,141	\$ (14,000)	\$ 673,141	\$ 430,122	\$ 55,159	\$ 187,860	\$ 100,316	16 \$	87,544	%66 98
400	PURCHASED PROPERTY SERV.	64	1,814,663	\$ (8,700) \$	\$ 1,805,963	5 1,428,682	\$ 301,509	\$ 75,772	\$ 36,078	78 \$	39,693	97.80%
500	OTHER PURCHASED SERVICES	6A	10,095,326	\$ 231,626	\$ 10,326,952	\$ 9,359,227	\$ 1,424,630	\$ (456,905)	(117,839)	39) \$	(339,066)	103 28%
009	SUPPLIES	649	3,365,464	\$ 15,000	\$ 3,380,464	\$ 2,705,869	\$ 594,651	\$ 79,944	\$ (17,135)	35) \$	97,079	97,13%
700	PROPERTY	6/3	339,710	\$ 8,700	\$ 348,410	\$ 171,709	\$ 187,064	\$ (10,362)	(16,787)	87) \$	6,425	%91.86
800	MISCELLANEOUS	69	76,086		\$ 76,086	\$ 74,200	\$ 1,125	\$ 761	649	69 I	761	%00 66
910	SPECIAL ED CONTINGENCY	S	\$ 000,001	(100,000)	€ -		·	€9	649	S	ø	#DIV/0i
	TOTAL GENERAL FUND BUDGET	69	82,134,639	71 69	\$ 82,134,639	\$ 68,627,031	\$ 12,724,755	\$ 782,853	\$ 705,353	53 \$	77,500	%16'66
006	TRANSFER NON-LAPSING (unaudited)											
	GRAND TOTAL	69	82,134,639	£1.	\$ 82,134,639	\$ 68,627,031	\$ 12,724,755	\$ 782,853	\$ 705,353	53 \$	77,500	%16 66

OBJECT CODE EXPENSE CATEGORY	2022 APPI	2022 - 2023 APPROVED	YTD TRANSFERS	CURRENT	VTD			ANTICIPATED	Α.	%
1			C704 - 7707	DODGEI	EAFENDITURE	ENCUMBER	BALANCE	OBLIGATIONS	BALANCE	EXP
100 SALARIES										
Administrative Salaries	643	4,312,038 \$	(116,350) \$	4,195,688	\$ 3,686,529	\$ 504,852	\$ 4,307	\$ 17.531	\$ (13 224)	100 32%
Teachers & Specialists Salaries	\$	33,817,522 \$	144,350 \$	33,961,872	\$ 26,186,951		\$ 13,890	ده -	69	100 06%
Early Retirement	6/9	81,000 \$	59	81,000	\$ 89,000		(8,000)	69	(8,000)	%88 601
Continuing Ed/Summer School	sa	97,846 \$	1,161 \$	700'66	\$ 92,650	\$ 5,863	\$ 494	69	\$ 494	%05 66
Homebound & Tutors Salaries	S	189,413 \$	45,185 \$	234,598	\$ 157,078	\$ 18,901	\$ 58,618	\$ 13,000	\$ 45	80.55%
Certified Substitutes	643	742,610 \$	\$	742,610	\$ 701,484	\$ 55,240	\$ (14,114)	5A	٠	108.36%
Coaching/Activities	8	737,184 \$	69 (i)	737,184	\$ 715,951	S 0	\$ 21,233	69	6A	%05.26
Staff & Program Development	ક્લ	155,128 \$	(15,000) \$	140,128	\$ 57,357	\$ 80,759	\$ 2,013	\$ (2,915)	64	96.48%
CERTIFIED SALARIES	\$ 40	40,132,741 \$	59,346 \$	40,192,087	\$ 31,687,000	\$ 8,426,646	\$ 78,441	\$ 111,965	\$ (33,524)	100 08%
Supervisors & Technology Salaries	8	1,103,470 S	4,960 \$	1,108,430	\$ 885,910	\$ 118,522	\$ 103,998	\$ 101,276	\$ 2,722	%54 66
Clerical & Secretarial Salaries	64	2,361,178 \$	200 \$	2,361,378	\$ 2,011,735	\$ 302,353	47,290	\$ 4,600	8	98 19%
Educational Assistants	S	2,965,151 \$	47,602 \$	3,012,753	\$ 2,542,369	\$ 363,921	\$ 106,463	\$ 97,114	\$ 9,349	%69 66
Nurses & Medical Advisors	ss.	902,273 \$	31,615 \$	933,888	\$ 688,746	\$ 201,202	\$ 43,940	\$ 2,000	\$ 41,940	95.51%
Custodial & Maint, Salaries		3,395,484 \$	(45,604) \$	3,349,880	\$ 2,805,053	\$ 460,410	\$ 84,417	\$ 2,510	\$ 81,908	97.55%
Non-Certied Adj & Bus Drivers Salaries	64	155,981 \$	(155,981) \$			1		s	₩.	# DIV /0!
Career/Job Salaries	649	171,116 \$	4,257 \$	175,373	\$ 138,570	\$ 38,097	\$ (1,293)	\$ 2,207	\$ (3,501)	102 00%
Special Education Svcs Salaries	69	1,456,181 \$	(84,063) \$	1,372,118	\$ 1,178,888	\$ 174,240	\$ 18,990	\$ 2,223	\$ 16,767	%87 89
Security Salaries & Attendance	S	888,629	293 \$	680,181	\$ 574,672	\$ 63,502 \$	\$ 42,007	\$ 6,350	\$ 35,657	94 76%
Extra Work - Non-Cert,	\$	109,770 \$	4,500 \$	114,270	\$ 91,091	\$ 661 \$	\$ 22,519	\$ 16,730	\$ 5,789	94 93%
Custodial & Maint, Overtime	69	236,000 \$	69	236,000	\$ 252,944	-	\$ (16,944)	\$ 31,500	\$ (48,444)	120 53%
Civic Activities/Park & Rec.	\$	32,000 S	€ 9	32,000	\$ 27,029	\$.	4,971	\$ 1,000	\$ 3,971	87,59%
NON-CERTIFIED SALARIES	\$ 13	13,568,492 \$	(192,221) \$	13,376,271	\$ 11,197,008	\$ 1,722,907 \$	456,356	\$ 267,510	\$ 188,847	%65'86
SUBTOTAL SALARIES	\$ 53	53,701,233 S	(132,875) \$	53,568,358	S 42,884,008	s 10,149,553 s	534,798	\$ 379,475	\$ 155,323	99.71%
200 EMPLOYEE BENEFITS										
Medical & Dental Expenses	S	8,790,863 \$	(12,125) \$	8,778,738	\$ 8,769,764	\$ 30 \$	8,944	\$ 3,728	\$ 5,216	99,94%
Life Insurance	s	\$ 000,78	s .	87,000	\$ 81,874		5,126	\$ 7,406	\$ (2,280)	102 62%
FICA & Medicare	\$	1,706,549 \$	S -	1,706,549	\$ 1,389,945		316,604	\$ 297,000	\$ 19,604	%58 86
Pensions	sa	852,347 \$	25,000 \$	877,347	\$ 873,219	S - S	4,128	\$ 25,798	\$ (21,670)	102 47%
Unemployment & Employee Assist.	69	81,600 \$		81,600	\$ 34,566	\$ 11,035	36,000	\$ 7,313	\$ 28,687	64.84%
Workers Compensation	ss	436,657 \$	(12,626) \$	424,031	\$ 423,847	S .	184	ι 69	\$ 184	%96 66
SUBTOTAL EMPLOYEE BENEFITS	\$ 11	11,955,016 \$	249 S	11,955,265	\$ 11,573,215	\$ 11,065 \$	370,986	\$ 341,245	\$ 29,741	%57.66

OBJECT CODE EXPENSE CATEGORY	•	APPROVED BUDGET	TRA 202	TRANSFERS 2022 - 2023	CURRENT BUDGET	YTD EXPENDITURE	ENC	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS		PROJECTED BALANCE	% EXP
300 PROFESSIONAL SERVICES													
Professional Services	69	493,643	643	€ 9	493,643	\$ 346,085	69	31,075 \$	116,484	\$ 94.544	44 \$	21.940	%95 56
Professional Educational Serv	S	193,498	s	(14,000) \$	179,498	\$ 84,037	649	24,084 \$	71,376			65.604	63 45%
SUBTOTAL PROFESSIONAL SERV.	S	687,141	€9	(14,000) \$	673,141	\$ 430,122	so.	55,159 \$	187,860	\$ 100,316	16 \$	87,544	%66 98
400 PURCHASED PROPERTY SERV.													
Buildings & Grounds Contracted Svc.	649	683,600	69	\$	683,600	\$ 580,225	643	117,711 \$	(14.337)	S (6.4	(6456) \$	(7 880)	701.15%
Utility Services - Water & Sewer	69	144,770	69	69		\$ 104,948					_	21 970	7000 70
Building, Site & Emergency Repairs	\$	450,000	69	69		\$ 343,051		154,164 \$	_		_	(43.578)	109.68%
Equipment Repairs	69	269,051	69	6A	269,051	\$ 182,297	64	27,133 \$				43.302	83.91%
Rentals - Building & Equipment	\$9	267,242	64	(8,700) \$	258,542	\$ 218,161	64	2,500 \$		\$ 12,000		25.881	%66 68
Building & Site Improvements	89	v	6/9	\$		69	649	69 I					
SUBTOTAL PUR. PROPERTY SERV.	ક્ત	1,814,663	so.	(8,700) \$	1,805,963	\$ 1,428,682	မာ	301,509 \$	75,772	\$ 36,078	78 S	39,693	97.80%
500 OTHER PURCHASED SERVICES													
Contracted Services	s	886,545	6/9	427,070 \$	1,313,615 \$	984,443	64	183,585 \$	145,587	\$ 147,909	\$ 60	(2,322)	100.18%
Transportation Services	S	4,919,428	S	(308,070) \$	4,611,358 \$	4,114,728	69	344,927 \$	151,704	\$ 102,520	20 \$	49.184	98.93%
Insurance - Property & Liability	S	422,766	S	12,626 \$	435,392 \$	443,289	64	69	(7,897)	69	64	(7,897)	%18 101
Communications	S	152,524	S		152,524 \$	151,312	69	18,506 \$	(17,294)	\$ 8,000	\$ 00	(25,294)	116 58%
Printing Services	S	24,789	S	S	24,789 \$	16,193	69	7,611 \$	586	\$ 2,974	74 S	(1,989)	108 02%
Tuition - Out of District	S	3,450,187	S	S 000'001	3,550,187 \$	3,431,537	64	857,494 \$	(738,844)	\$ (390,724)	24) \$	(348,120)	109 81%
Student Travel & Staff Mileage	€9	239,087	S		239,087 \$	217,725	\$ 9	12,507 \$	8,855	\$ 11,482	82 \$	(2,627)	101 10%
SUBTOTAL OTHER PURCHASED SERV.	649	10,095,326	so.	231,626 \$	10,326,952 \$	9,359,227	\$	1,424,630 \$	(456,905)	\$ (117,839)	\$ (68	(339,066)	103.28%
600 SUPPLIES													
Instructional & Library Supplies	649	854,242	649	65	854,242 \$	791,646	69	134,103 \$	(71,507)	\$ (42,861)	51) \$	(28.646)	103.35%
Software, Medical & Office Supplies	69	194,940	69	S	194,940 \$	177,327	6 A	33,599 \$	(15,986)	\$ 2,000	\$ 00	(17,986)	109 23%
Plant Supplies	69	366,100	69	64	366,100 \$	378,633	6A	16,384 \$	(28,917)	\$ 6,951	\$ 12	(35,868)	109 80%
Electric	S	1,022,812	69	(449,500) \$	573,312 \$	607,287	649	S	(33,975)	\$ (170,298)	8) \$	136,323	76 22%
Propane & Natural Gas	69	424,980	69	40,000 \$	464,980 \$	425,461	S	\$5 **	39,519	\$ 46,519	\$ 6	(7,000)	101 51%
Fuel Oil	69	63,000	6∕3	\$3,500 \$	116,500 \$	80,695	S	6-9	35,805	\$ 12,805	\$ 50	23,000	80 26%
Fuel for Vehicles & Equip.	€9	216,258	6A	69	216,258 \$	102,007	64	6 9	114,251	\$ 80,391	31	33,860	84 34%
Textbooks	69	223,132	6-9	371,000 \$	594,132 \$	142,812	64	410,565 \$	40,755	\$ 47,358	\$ 85	(6,603)	101.11%
SUBTOTAL SUPPLIES	6/3	3,365,464	64	15,000 \$	3,380,464 \$	2,705,869	6/3	594,651 \$	79,944	\$ (17,135)	35) \$	97 0 7 9	97.13%

% EXP		(0) 100 00%	%99 96	%91 86		%00 66	%00 66	#DIV/0	%16.66
PROJECTED BALANCE		0	6,425	6,425		761	761	Ñ	77,500
ANTICIPATED PRC OBLIGATIONS BA		(19,116) \$	2,329 \$	(16,787) \$		69	69 31	69 10	705,353 \$
		\$ (911,61)	8,754 \$	(10,362) \$		761 \$	761 \$	69	782,853 \$
BALANCE		649		<i>S</i> 9			69	69	
ENCUMBER		55,751	131,313 \$	187,064		1,125 \$	1,125)(* -)	12,724,755 \$
YTD EXPENDITURE E		119,389 \$	52,319 \$	171,709 S		74,200 \$	74,200 S	s	68,627,031 \$
SURRENT BUDGET EX		156,024 \$	192,386 \$	348,410 \$		\$ 980'92	76,086 \$	8	82,134,639 \$
YTD TRANSFERS (2022 - 2023		s,	8,700 \$	8,700 \$		\$	69	(100,000) \$	69
2022 - 2023 APPROVED TR BUDGET 20		156,024 \$	183,686 \$	339,710 \$		76,086 \$	76,086 \$	100,000 S	82,134,639 \$
205 API BI		S	S	69		6 4	69	ses.	ક્ક
OBJECT CODE EXPENSE CATEGORY	700 PROPERTY	Technology Equipment	Other Equipment	SUBTOTAL PROPERTY	MISCELLANEOUS	Memberships	SUBTOTAL MISCELLANEOUS	910 SPECIAL ED CONTINGENCY	TOTAL LOCAL BUDGET
OBJECT	700				800			910	

900 Transfer to Non-Lapsing

GRAND TOTAL

77,500

782,853 \$

68,627,031 \$

82,134,639 S

82,134,639 \$

	SPECIAL REVENUES									
	EXCESS COST GRANT REVENUE	APPROV	ED STATE	PROJECTEIST	APPROVED STATE PROJECTEISTATE PROJECTED ESTIMATED	ESTIMATED	VARIANCE			% TO
		BUDGET	Т	1-Jan	1-Mar	Total	to Budget	FEB DEPOSIT	MAY DEPOSIT	BUDGET
51266	Special Education Svcs Salaries ECG		s	(7,843) \$	(7,750) \$	(7,750)	\$ 7,750	\$ (5,673)	\$ (2.077)	#DIV/0i
54116	Transportation Services - ECG	\$ (320	(320,028) \$	(469,245) S	\$ (1+9'68+)	(489,641)	\$ 169,613	\$ (358,435)	\$ (1	
54160	Tuition - Out of District ECG	\$ (1300	(1,300,484) \$	(1,348,899) \$	(1,373,397) \$	(1,373,397)	S	\$ (1,005,383)	s	
	Total	\$ (1,620	(1,620,512) \$	(1,825,987) \$	(1,870,788) \$	(1,870,788) S	\$ 250,276	\$ (1,369,491) \$	\$ (501,297)	115 44%
						•88		Total*	1)	
								*75% of Jan Proj		
	SDE MAGNET TRASNPORTATION GRANT	\$ (13,	(13,000) \$	(13,000)	S	(13,000) \$	69			%00 001
	OTHER REVENUES									
				APPROVED				%		
	BOARD OF EDUCATION FEES & CHARGES - SERVICES			BUDGET	ANTICIPATED	RECEIVED	BALANCE	RECEIVED		
	LOCAL TUITION			\$32,430	\$32,430	\$37,986	(\$5,556)	117 13%		
	HIGH SCHOOL FEES FOR PARKING PERMITS			\$30,000	\$30,000	\$30,000	80	100 00%		
	MISCELLANEOUS FEES			86,000	86,000	\$16,696	(\$10,696)	278.27%		
	TOTAL SCHOOL GENERATED FEES			\$68,430		\$84,683	(\$16,253)	123.75%	vi	
	OTHER GRANTS	TOTAL BUD	BUDGET 21-22	21-22 EXPENSED	YTD EXPENSE	ENCUMBER	BALANCE	% EXPENSED		
214	ESSER II	\$625,532	,532	\$573,735	\$16,243	\$32,016	\$3,538	99.43%		
218	ESSER III (estimated \$809k for 21-22 use)	\$1,253,726	,726	\$709,840	\$468,221	\$54,470	\$21,195	98.31%		

2022 - 2023 NEWTOWN BOARD OF EDUCATION TRANSFERS RECOMMENDED MAY 31, 2023

CODE DESCRIPTION

ADMINISTRATIVE

\$101,276	100	\$101,276 100 SUPERVISORS/TECHNOLOGY SALARIES	200	700 TECHNOLOGY EQUIPMENT	TO COVER PRE-PURCHASING OF CHROMEBOOKS
\$95,114	100	\$95,114 100 EDUCATIONAL ASSISTANTS			AND OTHER TECHNOLOGY EQUIPMENT
\$196,390					
\$56,140	009	\$56,140 600 FUEL FOR VEHICLES & EQUIP.	009	INSTRUCTIONAL & LIBRARY SUPPLIES	600 INSTRUCTIONAL & LIBRARY SUPPLIES TO COVER PRE-PURCHASING OF SUPPLIES AND
					REQUIRED SPECIAL EDUCATION SUPPLIES
\$42,677	009	\$42,677 600 ELECTRIC	009	600 TEXTBOOKS	TO COVER PRE-PURCHASING OF TEXTBOOKS
\$295,207		TOTAL TRASNFERS REQUESTED			

2022 - 2023 NEWTOWN BOARD OF EDUCATION DETAIL OF TRANSFERS RECOMMENDED

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		FROM				E	
100						10	
OBJECT				OBJECT			
CODE	AMOUNT			CODE	AMOUNT		
100	\$101,276	\$101,276 SUPERVISORS/TECHNOLOGY SALARIES		700	\$196,390	\$196,390 TECHNOLOGY EOUIPMENT	
		\$94,405 001810850000-51210 DISTRICT - TECH SU	SUPERVISORS/TECH STAFF			\$196,390 001810850000-57200 DISTRICT - TECH	FOLITPMENT/PROBERTY
		\$6,871 001900920000-51210 B&G - ADMIN. St	SUPERVISORS/TECH STAFF				EXCHINENTIFICATION I
100	\$95,114						
	\$196,390	\$1,114 001100380000-51232 HAW, - CLASSROOM ED	D ASSISTANTS				
		\$39,000 001450380000-51232 RIS - CLASSROOM ED	D ASSISTANTS				
		\$18,000 001750610000-51235 SP ED - RIS SP ED ED	D ASSISTANTS				
		\$37,000 001750630000-51232 SP ED - H S SP ED ED	D ASSISTANTS				
009	\$56,140	\$56,140 FUEL FOR VEHICLES & EQUIP.		009	\$56,140	\$56,140 INSTRUCTIONAL & LIBRARY SUPPLIES	
		\$56,140 001920870000-56600 DISTRICT TRANSPORT FL	FUEL FOR VEHICLES			\$14,080 001200380000-55100 S.H CLASSROOM	INSTRUCTIONAL SUPPLIES
						\$10,869 001400380000-55100 HOMCLASSROOM	INSTRUCTIONAL SUPPLIES
						\$11,992 001500120000-55100 M.S WORLD LANG	INSTRUCTIONAL SUPPLIES
						\$19,199 001750610000-55100 SPED-PREK-8 SPED	INSTRUCTIONAL SUPPLIES
009	\$42,677	S42,677 ELECTRIC		009	\$42,677	\$42,677 TEXTBOOKS	
		\$42,677 001900960000-56205 B&G - CUSTODIAL EL	ELECTRICITY - RIS			\$16,710 001200380000-56900 S.H CLASSROOM	TEXTBOOKS
						\$12,017 001400380000-56900 HOM - CLASSROOM	TEXTBOOKS
						\$13,950 001800800000-56900 DISTRICT - CURRICULUM	TEXTBOOKS
	\$295,207	S295,207 TOTAL TRANSFERS REQUESTED) HES	2295,207	TOTAL TRANSFERS REQUESTED	



Newtown Public Schools

June 2023 Board of Polocomon







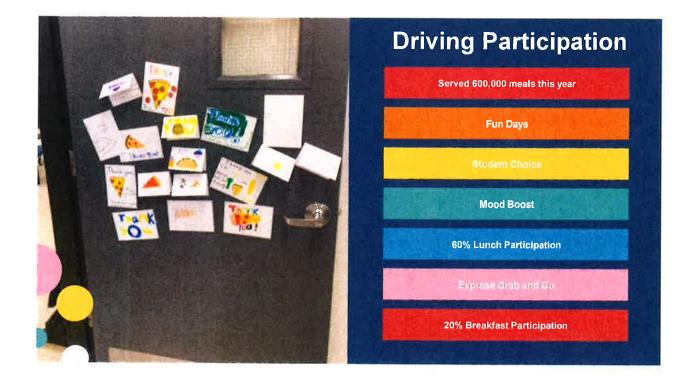








Building on Our Success









MAOD BOOST

Engagement program featured at: Middle School & Reed for 7 weeks All elementary schools for 7 weeks



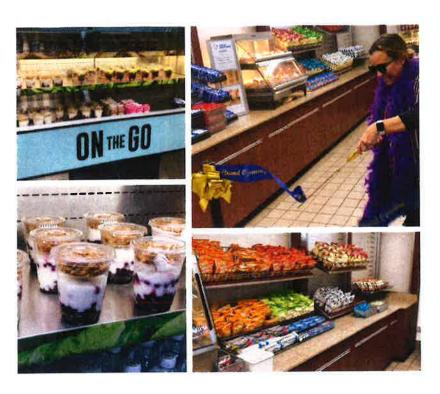












Express Grand Opening!

- Opened in November 2022
- Made From Scratch Soup Program
- Full breakfast available
- Favorite snacks















Happy Teams





What's Next











Strategic Plan May 30, 2023



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Strategic Priority 3 1
Strategic Priority 4
Continuous Improvement Process



Dear Parents, Students, Staff, and Community Members,

I am delighted to present to you the Newtown Public Schools Strategic Plan, a roadmap that will guide our collective efforts towards an exceptional education for all our students. Beginning in November of 2022, the Newtown Board of Education launched a strategic planning process designed to solicit input from various stakeholders including, students, parents, educators, community members and experts. Through surveys, focus groups and individuals, we learned about your current experiences of the school district as well as your hopes for the future. Through the winter and spring of 2023, the Strategic Planning Committee carefully analyzed the diverse perspectives of our community, considering strengths, challenges, and aspirations for the future.

At the core of our plan is the unwavering commitment to ensuring all students graduate prepared to succeed in life. With your assistance, we have articulated a Portrait of the Graduate; a vision of the skills and dispositions necessary to thrive after graduation. This will be our North Star, shining a light and providing clarity of purpose. We have also identified four strategic priorities that will help guiding efforts in the coming years:

- Strategic Priority 1: Ensure Stimulating, Engaging, and Challenging Learning Opportunities Tailored to the Individual Needs of Students
- Strategic Priority 2: Prepare Students for Life Beyond Graduation
- Strategic Priority 3: Hire, Retain, and Develop a Diverse and Exceptional Faculty and Staff
- Strategic Priority 4: Strengthen District, Family, and Community Partnership

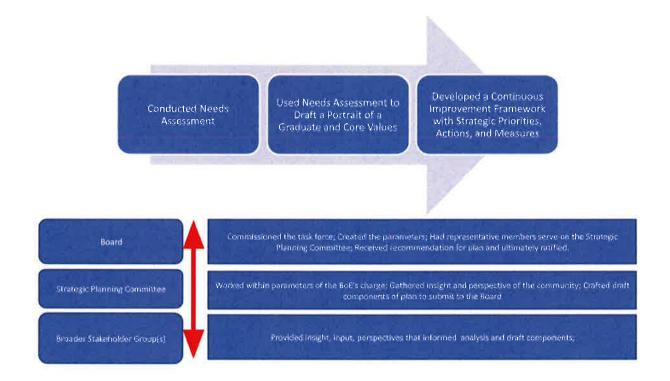
At Newtown Public Schools, we are committed to providing an exceptional educational experience that empowers students to thrive academically, socially, and personally. Our strategic plan serves as a roadmap for achieving our mission and guiding our actions as we strive for continuous improvement and excellence.

I invite you all to join us on this exciting path as we work towards realizing our shared vision of academic excellence, student well-being, and community engagement. Together, we will make a positive and lasting impact on the lives of our students and the future of our community.

Sincerely,



Newtown Strategic Planning Process







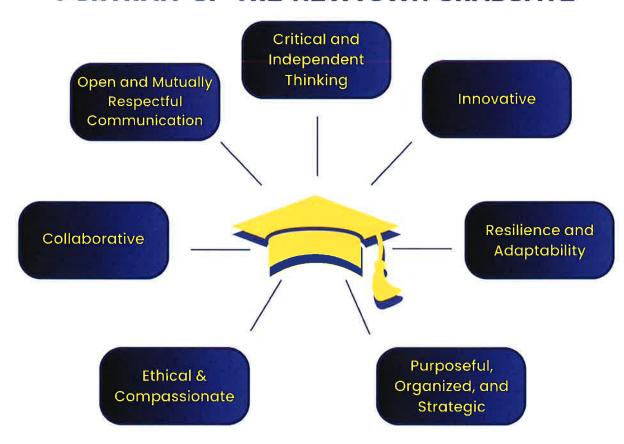


Portrait of the Newtown Graduate

Dimension	
Critical and Independent Thinking	 Processes, analyzes, examines, interprets, and evaluates information to form an opinion and make decisions Questions, discusses, and explores varying ideas and viewpoints
Innovative	 Demonstrates a sense of curiosity Uses imagination to identify novel solutions to existing challenges Explores the unknown
Resilience and Adaptability	 Perseveres and adapts to challenges Learns and grows from setbacks and challenges Exhibits flexibility in changing situations
Purposeful, Organized, and Strategic	 Identifies and pursues goals Assesses complex challenges and identifies appropriate strategies Monitors progress and adjusts approaches as necessary
Ethical & Compassionate	 Displays empathy and regard for others Fosters a caring community Seeks to understand the perspectives of others Seeks to serve others and the community Acts with integrity in accordance with defined principles
Collaborative	 Works interdependently and respectfully with others to enhance learning and achieve common goals Respects divergent thinking and works with others in productive discussion Partners with others possessing varying backgrounds and experiences Welcomes feedback from others to enhance quality of work
Open and Mutually Respectful Communication	 Listens to and seeks to understand the ideas, thoughts, and opinions of others Articulates ideas effectively in varying modes and media Understands and tailors communications to the audience and the intended purpose



PORTRAIT OF THE NEWTOWN GRADUATE





Core Values of the Newtown Public Schools Community

	We are committed to:
Respect	Valuing and Maintaining Positive Regard for Others
Inclusion, Belonging, and Diversity	A compassionate, community-minded climate that embraces and honors the needs and contributions of all.
Integrity	Displaying ethical conduct in every decision and practice.
Excellence Through Continuous Improvement	A disciplined, rigorous and dynamic pursuit of improvement for students and staff.
Innovation	Exploring, researching and investigating new solutions and opportunities.
Collaboration	Working together respectfully and supporting each other in pursuit of common purpose.
Safety	Ensuring the physical and emotional well-being of all.



CORE VALUES

SAFETY

Ensuring the physical and emotional wellbeing of all

RESPECT

Valuing and maintaining positive regard for others

COLLABORATION

Working together respectfully and supporting each other in pursuit of common purpose

NEWTOWN SCHOOLS IS COMMITTED TO...

INCLUSION, BELONGING & DIVERSITY

A compassionate, community-minded climate that embraces and honors the needs and contributions of all

INNOVATION

Exploring, researching and investigating in new solutions and opportunities

EXCELLENCE THROUGH CONTINUOUS IMPROVEMENT

A discipline, rigorous and dynamic pursuit of improvement for students and staff

INTEGRITY

Displaying ethical conduct in every decision and practice



Newtown Board of Education's Statement on Diversity, Equity and Inclusion

Diversity, equity and inclusion are words that, when used together, describe policies and programs that promote the representations, participation and contributions of different groups of individuals as set forth in <u>Policy 0523 Equity and Diversity</u> including but not limited to people of different race, culture, religion, mental and physical ability, sexual orientation, or gender expression or identity.

More specifically:

- Schools should be welcoming and supportive spaces for our students.
- Our curriculum should be infused with materials that include diverse authors, protagonists, heroes and historical figures.
- When studying topics in our classroom, our students will learn through multiple lenses and points of view.
- Schools should embrace kindness and diversity. Any form of harassment or bullying based on personal characteristics, as enumerated above, will not be tolerated.
- As educators, we need to provide various perspectives on topics and remain apolitical. To
 encourage critical thinking, we need to develop learning environments that allow students to
 identify and understand perspectives provided in the material and related discussions, and to
 draw their own informed conclusions. That is where true learning occurs.



STRATEGIC PRIORITIES





Strategic Priority 1:

Ensure Stimulating, Engaging, and Challenging Learning Opportunities Tailored to the Individual Needs of Students

Strategic Actions	Measures of Progress
Making learning experiences that are culturally responsive, rigorous, and personalized	 Learning Walks and other types of non-evaluative classroom visits Annual performance on benchmark assessments Student/Family Survey
Increase opportunities for inquiry-based and student-centered learning that promotes curiosity and student engagement	 Student/Family Survey Learning Walks and other types of non-evaluative classroom visits Annual performance on benchmark assessments
Use data and evidence to drive instructional decision making to meet the individual needs of our students	 Annual performance on benchmark assessments Number of students receiving interventions- in and dismissed Annual review of data use for driving instruction
Create learning experiences that support students in identifying and understanding perspectives provided in materials and related discussions, and to draw their own conclusions.	 Learning Walks and other types of non-evaluative classroom visits Annual performance on benchmark assessments Student/Family Survey Non-evaluative classroom visits Analysis of curricular shifts within ongoing curriculum review process



Strategic Priority 2: Prepare Students to Thrive Post-Graduation

Strategic Actions	Measures of Progress
Make available to students a variety of resources and options for post high school pursuits.	 Exit surveys and interviews (sampling strategy) of graduating seniors College and Career Center participation metrics Student interest survey
Provide authentic experiences aligned to post-graduate possibilities/opportunities.	 Capstone topics for graduating seniors End-of-capstone survey
Create a comprehensive plan to help all students achieve the portrait of the graduate, including an assessment process	 Completion of the plan Implementation of plan at school levels
Expand opportunities for students to explore career pathways and to develop marketable skills	 Exit surveys and interviews (sampling strategy) of graduating seniors College and Career Center participation metrics Participation rates in career pathway opportunities



Strategic Priority 3:

Hire, Retain, and Develop a Diverse and Exceptional Faculty and Staff

Strategic Actions	Measures of Progress
Analyze climate surveys to identify needs and develop school-specific action steps to address results	 Existence of school annual plans Progress toward addressing identified needs
Diversify applicant pool by strategic recruitment	 Creation of a comprehensive recruitment system Annual summary of applicant diversity statistics
Provide mentoring support for all new hires	 Annual survey of new teachers and mentors Annual retention rates
Create comprehensive professional development plan to address needs at the individual, school and district levels	 Professional development priorities articulated in annual improvement plans Professional development impact results



Strategic Priority 4: Strengthen District, Family, and Community Partnership

Strategic Actions	Measures of Progress
Enhance communications to stakeholders to encourage timely and effective information flow using various methods.	 Parent survey results, disaggregated by school Annual communications plan that articulates priorities, strategies and timetables
Rebuild district website to optimize communications with stakeholders	 Completion and launch and website Website view statistics Participation rates for family programming events
Revitalize family advisory groups at the school and district levels to enhance engagement, problem-solving, and feedback.	 Articulated charter of advisory groups Parent survey results, disaggregated by school
Build capacity within the district and community to support diversity, inclusion, accessibility and belonging.	 Completed needs assessment by consultant. Implementation of recommendations from consultant.



Newtown Continuous Improvement Process

The Newtown Public Schools Strategic Plan is a tool to clarify priorities and promote focused and sustained improvement efforts over time. To operationalize the Strategic Plan, NPS will engage in an annual process of study, plan, act, and do.

Each year:

- NPS and the board will review progress from the previous year and identify annual goals in alignment with the Strategic Plan.
- School leadership teams will examine results from the previous year and identify school-based goals in alignment with the Strategic Plan.
- The Communications Committee of the NPS Board of Education will publish highlights of progress aligned with the Strategic Plan.
- The Strategic Planning Committee meets three times per year to review progress, examine data, provide updates to the Communications Committee, and identify necessary adjustments.
- NPS Superintendent will provide the Board of Education updates three times per year in alignment with Strategic Planning Committee Meeting reviews.
- Family Advisory Groups will be invited to board meetings for strategic plan progress updates.

Unit Calendar





Kitchen Science Gr. 7

2 Curriculum Developers | Last Updated: Tuesday. May 2, 2023 by Iaciofano, Elizabeth

Unit Calendar by Year

Food Chemistry and Food Safety Unit

Mar

Feb

Jan

Dec

0

1 Unit found

Previous Year



Unit Planner: Food Chemistry and Food Safety Kitchen Science Gr. 7

Newtown Middle School / 2022-2023 / Grade 7 / Science / Kitchen Science Last Updated: <u>Tuesday, May 2, 2023</u> by Gr. 7 / Week 1 - Week 20 Elizabeth laciofano

Food Chemistry and Food Safety Bradley, Nancy; Iaciofano, Elizabeth

- Unit Planner
- Lesson Planner

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Change

Concepts: Structure, Process, Motion, Energy, Transformation, Growth, Function, Health

G

Generalizations / Enduring Understandings

- 1. Adding energy to a system creates a change in motion which when sufficient leads to a change in the state of matter or chemical transformation.
- 2.A change in molecular structure affects function.
- 3.Following specific processes for storing and cooking food reduces the likelihood of bacterial growth thereby affecting health.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- 1a. What are the three states of matter? (F)
- 1b.What is an atom? (F)
- 1c.What is a molecule? (F)
- 1d. What is a solution? (F)
- 1e. What is a mixture? (F)
- 1f. What is the difference between a physical change and a chemical change? (F)
- 1g. What happens to molecules when they are heated up and cooled down? (F)
- 1h.What is bench tolerance and how do the three leavening gases in baked goods affect bench tolerance? (F)
- 1i. Why do oil and water separate when in a mixture? (C)
- 1j. Why does dissolved sugar come out of solution when cooled? (C)

- 1k.Why does a cut up apple turn brown? (C)
- 1l. How does adding heat enhance the leavening process?(C)
- 1m.Which is more useful, baking soda or baking powder and why? (P)
- 2a. What is sugar and what are examples of different types of sugar? (F)
- 2b.What is a protein? (F)
- 2c. What are the different structures of proteins? (F)
- 2d. What are the three components in a wheat kernel?
 (F)
- 2e. What is gluten and how is it formed? (F)
- 2f. How does the hygroscopic nature of sugar contribute to its function? (C)
- 2g. How does protein structure affect its function? (C)
- 2h. How can protein denaturation occur when preparing food? (C)
- 2i. How do eggs provide structure in cake? (C)
- 2j. How does the Maillard reaction occur when food is cooked? (C)
- 2k. How does flour provide structure? (C)
- 2l. Which has more gluten: wheat or white flour and why? (C)
- 2m. Is high fructose corn syrup safe to consume? (P)
- 2n. What are the pros and cons to alternatives to sugar? (P)
- 20. Which is healthier: wheat or white flour and why? (P)
- 3a.What is a foodborne illness (F)
- 3b. What happens to food when heated and how does this relate to prevention of illness from a microorganism? (C)
- 3c. What needs to be considered to safely purchase and

transport food?(C)

3d. What are the best ways to safely store food? (C)

3e. How can foodborne illnesses be avoided? (C)

3f.Is bacteria good or bad? Why? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science Performance Expectations (2017)

NGSS: MS Physical Science

MS.Structure and Properties of Matter

Performance Expectations

MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS.Chemical Reactions

Performance Expectations

MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

NGSS: MS Life Science

MS.Matter and Energy in Organisms and Ecosystems

Performance Expectations

MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

MS.Growth, Development, and Reproduction of Organisms Performance Expectations

MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

NGSS: Disciplinary Core Ideas

NGSS: 6-8

PS1: Matter and Its Interactions

PS1.A: Structure and Properties of Matter

Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (MS-PS1-2), (MS-PS1-3)

Gases and liquids are made of molecules or inert atoms that are moving about relative to each other. (MS-PS1-4)

In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations. (MS-PS1-4)

The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. (MS-PS1-4)

PS1.B: Chemical Reactions

Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS-PS1-2),(MS-PS1-3),(MS-PS1-5)

PS3: Energy

PS3.A: Definitions of Energy

The term "heat" as used in everyday language refers both to thermal motion (the motion of atoms or molecules within a substance) and radiation (particularly infrared and light). In science, heat is used only for this second meaning; it refers to energy transferred when two objects or systems are at different temperatures. (secondary to MS-PS1-4)

Temperature is not a measure of energy; the relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (secondary to MS-PS1-4)

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Critical Content & Skills

What students must KNOW and be able to DO

Generalization 1

Students will know that:

- the four states of matter are liquid, solid, gas, and plasma
- an atom is the smallest unit of matter that makes up an element
- a molecule is a group of atoms bonded together.
- · a mixture is made up of two or more different substances that are not chemically combined
- a solution is a mixture in which two or more substances are well mixed (homogeneous). Best known when a solute is dissolved in a solvent
- a physical change occurs when a substance changes its appearance/state of matter where a chemical change results in the formation of a new substance
- when molecules are heated up, they start vibrating/moving faster causing them to bang into each other and, in turn, causing them to spread out which leads to a decrease in density as the volume increases. When molecules cool down, they slow down allowing the attraction between molecules to bring them closer leading to a decrease in volume and increase in density.
- oil and water don't naturally mix. This is because water molecules prefer to stick with other water molecules and they move as far from the oil molecules as possible. The same is true for the oil molecules, which are hydrophobic. As a result, oil and water molecules are happiest furthest from each other so they separate into layers when mixed together. The drops of oil separate from the water droplets and touch one another then merge to form a single drop of oil. This happens until the two liquids completely separate into two layers. The more dense water is at the bottom and oil is on the top. These fluids are called immiscible because they don't dissolve in one another. When making a vinaigrette of oil and vinegar(vinegar is mostly water), adding another ingredient, such as mustard, will help bind the oil and vinegar together by forming a buffer between the oil and water. The molecules that make up the mustard are amphiphilic: one half of each molecule is hydrophilic and likes to be in water and the other half is hydrophobic and likes to be in oil. We've formed an emulsion and the ingredients appear to be mixed but aren't at the molecular level. The oil is still separated from the water but the mustard binds it all together.

- when you supersaturate a solution with sugar, it is unstable as there is more solute than can stay in liquid form. When the solution cools, sugar molecules combine with each other and form crystals. As the solution continues to cool, more and more molecules combine making hard candy.
- bench tolerance is the measure of how well batters and doughs tolerate being held before baking without risking a large loss in leavening gases. It is affected by the thickness of the batter/dough and the leavening agent used.
- the three main leavening gases in baked goods are air, steam, and carbon dioxide.
- leavening agents cause baked goods to rise providing lightness and volume. Heat causes the gases to expand making them larger. This causes the cell walls to stretch increasing the volume. This, in turn, creates a strong structure preventing baked goods from collapsing.
- baking soda and baking powder are both leaveners but they are chemically different. Baking soda is sodium bicarbonate, which is a base, and needs an acid to produce gas. Baking powder is baking soda plus a dry acid. As a result, it doesn't need an acid to perform its leavening function. So baking powder is used when there is not an acid present in the ingredients and baking soda is used when an acid is part of the ingredients.
- a cut up apple turns brown due to a process called enzymatic browning. When the cut apple is exposed to
 oxygen, an enzyme, polyphenol oxidase (PPO), is triggered to oxidize micronutrients called polyphenols.
 This results in a new chemical to be produced that reacts with amino acids to produce brown-colored
 melanins. Different types of apples contain different amounts of PPO and polyphenols so they brown at
 different rates.

Students will be able to:

- create a heterogeneous and homogenous mixture and a solution.
- separate a solution into individual parts.
- explain the difference between baking soda and baking powder based on an activity investigating both.
- · explain what happens to molecules when heated and cooled.
- explain the purpose of adding salt to winter roads.
- explain the function of yeast and how to activate it.
- explain why apples get brown when exposed to air.

Generalization 2

Students will know that:

- sugars are simple carbohydrates: molecules that consist of carbon, hydrogen, and oxygen atoms arranged in a specific way. They are further classified as monosaccharides (one sugar unit) also known as simple sugars, disaccharides (two sugar units bonded together), oligosaccharides (usually 3-10 sugar units bonded to a chain), and polysaccharides (often thousands of sugar units). Common simple sugars are glucose and fructose. These are naturally present in many ripened fruit and are important in the makeup of many syrups. Maltose (malt sugar) is an example of a disaccharide that is commonly found in glucose corn syrup and malt syrup while lactose is a disaccharide found in dairy products and sucrose (table sugar) is the most common sugar in the bakeshop as it is glucose bonded to fructose. Oligosaccharides are often called dextrins and are present in many syrups used in the bakeshop. Lastly, starch is an example of a polysaccharide.
- some of the functions of sweeteners are related to their hygroscopic properties, or their ability to attract and hold water. Sugars are important in tenderizing because once dissolved, they interfere with gluten formation, protein coagulation, and starch gelatinization. This is because gluten, eggs, and starch structure all depend on water so sugars strong ability to attract water keeps it away from them thereby not allowing them to build structure and increasing the tenderness of the product. The more sugar added, the more the delay to structure formation and the more tender the baked good. If too much sugar is added, too little structure forms and the product will never rise or if it does rise, it will collapse when it cools. In the end, the hygroscopic nature of sugar increases the softness and moistness in freshly baked goods and extends their shelf life by keeping them from drying and staling. Fructose is the most hygroscopic of the sugars so syrups that contain a significant amount of fructose such as honey, high fructose corn syrup, and agave syrup, provide more moistness than other syrups or granulated sugar.
- there are healthy and unhealthy substitutes for sugar.
- the Maillard reaction produces browning on cooked food. This occurs when the amino acids in the food binds

with sugar in the presence of heat. The molecule that results breaks down, binds to new molecules, and breaks down further. This process forms hundreds of new flavor molecules and causes browning to occur on the outside of the food.

- proteins are very large molecules made up of many amino acids linked together into long chains. There are 20 amino acids living organisms use to make proteins 9 are essential which means they cannot be made so we must eat them in food.
- there are four levels of structure for proteins: primary, secondary, tertiary, and quaternary. There are two major classes of proteins based on shape: fibrous proteins (linear shape) such as glutenin which forms the backbone of gluten (important in baked goods), ovomucin in egg whites, elastin in tendons, collagen in connective tissue, and keratin in hair and nails, and globular proteins (spherical shape) such as ovalbumin in egg whites and hemoglobin.
- egg whites, or egg albumen consists of more than 6 different types of proteins. This mix is responsible for most of the function of egg whites such as structure building and aeration. The egg yolk also provides structure in baked goods because it contains lipoproteins (proteins bound to fats and emulsifiers such as lecithin). These lipoproteins bond to both water and oil thereby binding complex mixtures of ingredients such as cake batter.
- when heat is added to protein, the protein wiggles breaking the bonds that hold the three-dimensional structure together and the protein unfolds or denatures. This causes the protein to not function properly.
- when you add a higher amount of heat to protein, it unfolds even further and causes the proteins to coagulate
 or stick together changing the liquid to a solid. Example: an egg cooking. The albumin goes from a clear
 liquid to a white solid as the protein denatures. Each of the proteins in eggs denature at a slightly different
 temperature so the egg appears different as it cooks.
- flour provides structure: Wheat is the most popular cereal grain for use in baked goods due mostly to the gluten that forms when flour is mixed with water. Without gluten, raised bread would not occur. Wheat kernels or wheat grains are the seeds of the wheat plant and they are the part milled into flour. There are three parts: the endosperm, the germ, and the bran. Whole wheat flour contains all three parts so it is considered whole grain while white flour is milled from the endosperm, which makes up 80% of the wheat kernel and is made up of mostly starch. Two proteins in the endosperm are glutenin and gliadin. When flour is mixed with water, glutenin and gliadin form a network of gluten, which is important in the structure of baked goods. The germ is the embryo of the wheat plant and contains many vitamins and minerals and is high in protein. The bran is the protective covering of the wheat kernel and is high in dietary fiber, protein, fat, B vitamins, and minerals. Bran and germ proteins are not gluten forming and actually interfere with gluten formation.

Students will be able to:

- determine the difference between molecular structures based on smell.
- investigate the amount of water sugar absorbs
- explore the function of thickeners in cooking
- observe the Maillard reaction when cooking.
- observe crystal formation of sugar and also how to avoid crystal formation when not desired.
- observe protein denaturation in eggs.
- investigate how proteins in eggs whites are stabilized by sugar in order to make a desired type of cookie.
- identify which flour creates the most gluten.
- observe the function of leavening agents in baking.
- research sugar substitutes and the GMO sugar beet controversy

Generalization 3

Students will know that:

• before food is cooked, it is filled with microorganisms (bacteria and fungi) that can be harmful if ingested. Small amounts of heat can cause the proteins within the microorganisms to malfunction and the organism dies. Most live and multiply in a temperature range of a few degrees above freezing to 122 degrees F. At cooler temperatures, it is too cold for microbes to survive and grow. This is why freezing and refrigeration are effective ways to preserve food.

- in order to safely purchase food: check the expiration (sell by or best by) dates and checked canned goods for damage (swollen, bulging, leaking, dents)
- when purchasing eggs, choose only refrigerated eggs and make sure they are clean and are not cracked as bacteria from cracked eggs can be transferred to the surface of, and then inside of, a neighboring uncracked
- when purchasing produce, fruits and vegetables have a short shelf-life so they should not be bought in bulk unless they will be cooked/eaten in short order. Don't purchase produce that is bruised, shriveled, moldy, slimy, or have soft spots.
- when purchasing meat, fish, poultry, dairy: check expiration/sell by date. Place raw seafood, meat, and poultry in plastic bags to prevent cross contamination to other foods in the shopping cart. Choose only pasteurized dairy products as this process ensures no harmful bacteria will be present.
- it's important to shop for refrigerated foods, frozen foods, and hot deli items last to ensure they are not in the danger zone (40-140 degrees F) for more than 2 hours.
- it's important to bag and transporting food, bag meat, seafood, poultry in a bag separate from all other food; bag cold/frozen items together; separate non-food items such as cleaning supplies. Place cold foods in the coldest part of the car: backseat with the A/C on in the summer and in the trunk in the winter.
- storage of perishable foods involves the following: Meat, poultry, and seafood should be stored in the lowest part of the refrigerator as this where the coldest air circulates and it prevents cross-contamination by containing dripping juices so they don't come in contact with ready-to-eat foods. Dairy and egg products should be stored on the refrigerator shelves and never in the door. The door is the warmest area in the refrigerator so it should be for storing condiments, nondairy drinks, jarred foods, etc. Keep fruits and veggies in the crisper.
- storage of nonperishable foods involves the following: nonperishable foods such as canned goods, pasta, flour, cereal, peanut butter, and rice should be stored in a dark, dry, cool space kept at room temperature. These foods do best in a cupboard or pantry away from the range, over, dishwasher, or refrigerator exhaust
- it is important to discard cans that are leaking, bulging, dented, or rusty. Low-acid canned foods such as stews, soups, vegetables, pasta maintain their quality for 2-5 years, high-acid canned foods such as tomato products, fruits, sauerkraut, and salad dressings maintain their quality for 12-18 months, and canned fruit juices maintain their quality for approximately 9 months.
- researchers have identified more than 250 foodborne diseases most of them caused by bacteria, viruses, and parasites. However, harmful toxins and chemicals can also contaminate food causing illness. It can be avoided by following 4 steps: clean, separate, cook, and chill. Clean your hands, work surface, and tools with hot soapy water and rinse fruits and vegetables under running water. Keep raw meat, seafood, poultry, and on

eggs separate from all other roods, cook rood to the correct temperature using a rood thermometer where
appropriate, and chill/refrigerate promptly (keep your refrigerator at 40 degrees F or below, refrigerate
perishables within 2 hours, and thaw frozen food in the refrigerator, in cold water, or in the microwave; not of the counter).

Students will be able to:

store food safely...

Core Learning Act	ivities
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Generalization 1:

- 1. Mixture/Solution/Solubility activities- investigate the difference between a mixture and a solution
- 2. emulsions and adding heat to marshmallows observe molecules that are hydrophobic, hydrophilic, and

amphiphilic and observe what happens when molecules are heated
3. <u>Leavening agents activity</u> - investigate the difference between different leavening agents.
 4. <u>Chemical Change Activities</u> - creating bubbles and heat through chemistry to leaven dough; blowing up a balloon when yeast, water, and sugar are added; observing the Maillard reaction. 5. <u>Making ice cream activity</u> - salt lowers freezing point of water making it colder
Generalization 2:
1. <u>Investigating the hygroscopic nature of sugar</u> - using sugar cubes and colored water to see sugar's absorption power
2. <u>investigating pectin by making strawberry jam</u> - pectin is a natural thickening agent that is activated when sugar is added to the acid in strawberries
 Making Hard Candy- investigate crystal formation of sugar Investigating Protein Denaturation - investigate protein denaturation through heating egg whites and beating them.
5. Making Toll House Cookies - applying knowledge of sugar, flour, protein, and yeast.
6. Measuring the amount of sugar in beverages - use a hygrometer to determine the sugar level in beverages
7. Making Homemade Soft Pretzels - investigate gluten and the function of yeast using white flour.
8. <u>Sugar Substitutes Assignment</u> - web-based research assignment investigating common sugar substitutes.
Generalization 3:
Food Safety Assignment - read an article and watch videos while answering questions

Assessments

Assessments

7 Food safety assignment S2

Resources

Professional & Student

Books:

- 1. The Food Safety Book by Joe Kivett and Dr. Mark Tamplin with Dr. Gerald J. Kivett Copywrite 2016
- 2. Awesome Kitchen Science Experiments for Kids by Dr. Megan Olivia Hall, Copywrite 2020
- 3. How Baking Works, 3rd edition by Paula Figoni, Copywrite 2011
- 4. Culinary Reactions: The Everyday Chemistry of Cooking by Simon Quellen Field, Copywrite 2012
- 5. The Science of Cooking by Dr. Stuart Farrimond, Copywrite 2017
- 6. Science and Cooking by Michael Brenner, Pia Sorensen, and David Weitz, Copywrite 2020

Websites:

Leavening agents information

Exploratorium - The Accidental Scientist: The Science of Cooking

Sciencebob.com

100 amazing food experiments for kids Simple experiments and activities for youth Science Buddies

Food Science Experiments - Steve Spangler

sugar crystal ornaments
Food science activities for middle school

Student Learning Expectation & 21st Century
Skills

Information Literacy
Critical Thinking
Spoken Communication
Written Performance

This unit connects to math when measuring, to health when discussing nutrition and food preservation, and to literacy when students analyze data and explain the science behind what they observe.

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Kitchen Science Gr. 8 (Pilot)

2 Curriculum Developers | Last Updated: Tuesday, May 2, 2023 by Iaciofano, Elizabeth

Unit Calendar by Year

Unit	Lessons	Au Sep Oct Nov Dec Jan Feb Mar Apr May Ju 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 38 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 10 12 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
Daf Waves, Molecular Motion, an	0	
Daff Food Chemistry	0	
Daft Food Preservation	0	

3 Units found

1



Unit Planner: Waves, Molecular Motion, and Senses Kitchen Science Gr. 8

Newtown Middle School / 2022-2023 / Grade 8 / Science / Kitchen Science Gr. 8 (Pilot) / Week 1 - Week 3

Last Updated: <u>Tuesday, May 2, 2023</u> by Elizabeth Jaciofano

Waves, Molecular Motion, and Senses Bradley, Nancy; Jaciofano, Elizabeth

- Unit Planner
- Lesson Planner

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Change

Concepts: Structure, Process, Motion, Energy (heat and electromagnetic), Transformation, Function, Health

G

Generalizations / Enduring Understandings

- 1. Food cooks when heat and electromagnetic energy transfer from one source to another.
- 2. Cooking food causes a change in structure and function.
- 3. Specialized cells located in our sense organs collect sensory information that is then brought to our brain for interpretation resulting in our ability to taste and smell food.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- 1a. What is electromagnetic radiation? (F)
- 1b. What is a wave? (F)
- 1c. What are the parts of a wave? (F)
- 1d. What is the difference between a light and a sound wave? (F)
- 1e. How are microwaves different from the other types of waves in the electromagnetic spectrum? (C)
 1f. What is the difference between a microwave oven, conventional oven, and a convection oven when cooking food? (C)
- 1g. Is radiation harmful to humans? (P)
- 1h. What are the pros and cons of the three types of ovens? (P)
- 2a. What is the difference between a physical change and a chemical change? (F)
- 2b. What happens to molecules when they are heated

up and cooled down? (F)

- 2c. How does a microwave lead to cooked food? (C)
- 2d. How do the different types of heat transfer apply to cooking? (C)
- 3a. What is the difference between a stimulus and a receptor? (F)
- 3b. What is a neuron? (F)
- 3c. How do specialized cells contribute to the ability to taste and smell? (C)
- 3d. Why do different foods smell and taste different? (P)
- 3e. How are taste and smell connected? (C)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science Performance Expectations (2017)

NGSS: MS Physical Science

MS.Waves and Electromagnetic Radiation

Performance Expectations

MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

NGSS: MS Life Science

MS.Structure, Function, and Information Processing

Performance Expectations

MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

MS.Matter and Energy in Organisms and Ecosystems Performance Expectations

MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

MS.Growth, Development, and Reproduction of Organisms Performance Expectations

MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

NGSS: Disciplinary Core Ideas

NGSS: 6-8

LS1: From Molecules to Organisms: Structures and Processes

LS1.D: Information Processing

Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories. (MS-LS1-8)

PS4: Waves and Their Applications in Technologies for Information Transfer

PS4.A: Wave Properties

A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude. (MS-PS4-1)

PS4.B: Electromagnetic Radiation

The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends. (MS-PS4-2)

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Critical Content & Skills

What students must KNOW and be able to DO

Generalization 1

Students will know that:

- electromagnetic radiation is one way energy travels through space. The heat from a burning fire, the light from the sun, the X-rays used by your doctor, as well as the energy used to cook food in a microwave are all forms of electromagnetic radiation. All these forms of energy exhibit wavelike properties.
- a wave is a disturbance in a medium or field that results in vibration or oscillation.
- a wave has a trough (lowest point) and a crest (highest point). The vertical distance between the tip of a crest
 and the wave's central axis is known as its amplitude. This is the property associated with the brightness, or
 intensity, of the wave. The horizontal distance between two consecutive troughs or crests is known as the
 wavelength of the wave.
- the quantity known as the wave's *frequency* refers to the number of full wavelengths that pass by a given point in space every second; the SI unit for frequency is Hertz, which is equivalent to "per seconds"
- wavelength and frequency are inversely proportional: that is, the shorter the wavelength, the higher the frequency, and vice versa.
- a wave's period is the length of time it takes for one wavelength to pass by a given point in space.
- electromagnetic waves can be classified and arranged according to their various wavelengths/frequencies;
 this classification is known as the electromagnetic spectrum.
- the visible spectrum—that is, light that we can see with our eyes—makes up only a small fraction of the different types of radiation that exist. To the right of the visible spectrum are the types of energy that are lower in frequency (and thus longer in wavelength) than visible light. These types of energy include infrared (IR) rays (heat waves given off by thermal bodies), microwaves, and radio waves. These types of radiation surround us constantly, and are not harmful, because their frequencies are so low. Lower frequency waves are lower in energy so are not dangerous to our health.
- to the left of the visible spectrum are ultraviolet (UV) rays, X-rays, and gamma rays. These types of radiation

are harmful to living organisms, due to their extremely high frequencies (and thus, high energies). It is for this reason that we wear suntan lotion at the beach (to block the UV rays from the sun) and why an X-ray technician will place a lead shield over us, in order to prevent the X-rays from penetrating anything other than the area of our body being imaged. Gamma rays, being the highest in frequency and energy, are the most damaging. Luckily though, our atmosphere absorbs gamma rays from outer space protecting us from harm.

- at the beginning of the twentieth century, the discovery that energy is quantized led to the revelation that light is not only a wave, but can also be described as a collection of particles known as photons. Photons carry discrete amounts of energy called quanta. This energy can be transferred to atoms and molecules when photons are absorbed. Atoms and molecules can also lose energy by emitting photons
- light waves are electromagnetic waves while sound waves are mechanical waves. Light waves are transverse (move up and down) while sound waves are longitudinal (move left and right). Light waves can travel in vacuum. Sound waves require a material medium to travel, and hence, cannot travel in vacuum.
- microwave ovens use electromagnetic radiation produced by microwaves to heat food. Microwaves are produced inside the oven by a component called a magnetron. These microwaves are reflected within the interior of the oven where they are absorbed by the food.
- microwaves cause water molecules to vibrate producing heat that cooks food. The interior of the oven is not heated; only the food.
- a conventional oven uses metal, wood, or an electric current to heat food. The interior of the conventional oven is heated up using a temperature gauge which then heats the food. Some spots of the oven may be hotter than others so food may not cook evenly. As a result, it must be turned half way through cooking.
- sometimes the oven contains a fan which distributes the heat evenly around the interior of the oven so food cooks evenly. This type of oven is a convection oven.

Students will be able to:

- explain what a wave is and what the parts of a wave are.
- explain what electromagnetic radiation is.
- explain the areas of the electromagnetic spectrum.
- explain the difference between a microwave oven and a conventional oven.
- explain how a microwave oven works.
- explain how conventional and convection ovens work.

Generalization 2

Students will know that:

- a physical change occurs when a substance changes its appearance/state of matter where a chemical change results in the formation of a new substance
- when molecules are heated up, they start vibrating/moving faster causing them to bang into each other and, in turn, causing them to spread out which leads to a decrease in density as the volume increases. When molecules cool down, they slow down allowing the attraction between molecules to bring them closer leading to a decrease in volume and increase in density.
- microwave ovens use electromagnetic radiation produced by microwaves to heat food. Microwaves are
 produced inside the oven by a component called a magnetron. These microwaves are reflected within the
 interior of the oven where they are absorbed by the food.
- microwaves cause water molecules to vibrate producing heat that cooks food. The interior of the oven is not heated; only the food
- heat transfer is the movement of energy from one place to the next. Conduction is the transfer of energy between adjacent molecules, convection involves the movement of heated fluid, and radiation refers to the transmission of energy in the form of electromagnetic radiation from one surface to another surface.
- transfer of heat in a pot of boiling water involves all three types of heat transfer: the hot burner transfers heat
 to the pot via radiation, the molecules start moving quickly when heated up bumping into each other
 transferring energy via conduction, and a convection current is created since the molecules are moving
 quickly and spread out as a result of bumping into other water molecules. This causes a decrease in density
 and the molecules move upward. When the molecules are further from the heat source, they cool down
 causing them to slow down and move closer together decreasing the volume and increasing the density.

This causes them to sink. This pattern repeats causing what's called a convection current.

Students will be able to:

- explain the difference between a physical and chemical change
- · explain what happens when molecules become heated
- · explain how a microwave oven cooks food
- · explain how heat is transferred when cooking

Generalization 3

Students will know that:

- a stimulus is what causes the nervous system to respond. It can be an internal or external stimulus. In the case of smell, it's an external stimulus. With taste, it's an internal stimulus.
- a receptor is what receives the stimulus. In the case of smell and taste, it's a sense organ (nose and mouth).
- a neuron is a nerve cell. It carries messages throughout the body.
- a sensory neuron is what takes the impulse created from the stimulus to the brain.
- the process of smelling is as follows: When humans sniff, odor molecules (stimuli) in the air are dissolved in the olfactory mucus in the nasal cavity. Olfactory receptor cells in olfactory epithelium detect these odors and send the electrical signals on to the olfactory bulbs. These signals are then sent along olfactory tracts to the olfactory cortex of the brain where the impulse is interpreted as a smell.
- humans can detect millions of different smells. Approximately 10 million olfactory receptor cells are in the olfactory mucosa.
- anosmia is the inability to detect smell. It can be temporary or permanent.
- taste receptor cells (taste buds) on the tongue and roof of the mouth are responsible for the ability to taste.
- taste buds send information to the brain via three cranial nerves.
- smell and taste are connected since the food molecules go from the mouth to the nasal cavity. If that cavity is enflamed, the molecules won't get to the olfactory nerves and then to the olfactory bulb. In turn, the impulse won't be created and sent to the brain.

Students will be able to:

- explain the process of how humans are able to smell
- explain what a neuron is and its importance in smelling and tasting
- explain how the sense of taste is related to the sense of smell

Core Learning Activities

Generalization 1

Wave speed activity

Congreliantion 2	
Generalization 2	
Molecular Motion Activity: making popcorn	
Assessments	Resources
	Professional & Student
	Introduction to Electromagnetic Waves - Khan Academy
	Differences between conventional oven and microwave oven
	The Physics Classroom - describing waves
	nasal cavity diagram
	The Science Behind Taste and Smell
	The science behind the taste and smell of food video
Student Learning Expectation & 21st Century Skills	Interdisciplinary Connections
nformation Literacy critical Thinking poken Communication Vritten Performance	This unit connects to 7th grade science in the discussion of what a wave is, the parts of a wave, and how it applies to both cooking and earthquakes and to literacy when students analyze data and explain the science behind what they observe.



Unit Planner: Food Chemistry Kitchen Science Gr. 8

Newtown Middle School / 2022-2023 / Grade 8 / Science / Kitchen Science Gr. 8 (Pilot) / Week 4 - Week 20

Last Updated: <u>Tuesday</u>, <u>May 2, 2023</u> by Elizabeth Jaciofano

Food Chemistry

Bradley, Nancy; laciofano, Elizabeth

- Unit Planner
- Lesson Planner

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Change

Concepts: Structure, Process, Motion, Energy, Transformation, Growth, Function

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Generalizations / Enduring Understandings

1. Adding energy to a system brings about a change in motion. Adding a sufficient amount of energy to a system leads to a change in the state of matter or a chemical transformation.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- 1a. What are the three states of matter? (F)
- 1b. What is an atom? (F)
- 1c. What is a molecule? (F)
- 1d. What is a solution? (F)
- 1e. What is a mixture? (F)
- 1f. What are the three main leavening gases in baked goods? (F)
- 1g. What is an emulsion? (F)
- 1h. What does it mean to sauté? (F)
- 1i. What is a roux? (F)
- 1j. What is a fat? (F)
- 1k.What are the different types of butter (F)
- 1l. Why does dissolved sugar come out of solution when cooled? (C)
- 1m. Why do oil and water separate when in a mixture? (C)

- 1n. How does adding heat enhance the leavening process?(C)
- 10. What is the difference between a saturated, unsaturated, polyunsaturated, and trans fatty acids? (C)
- 1p. How is butter made? (C)
- 1q. What is the difference between moisture and moistness? (C)
- 1r. Do different types of butter have an impact on cooking? (C)
- 1s. What is the function of butter in cooking? (C)
- 1t. How does the temperature of the butter affect its use in baking? (C)
- 1u. What is the difference between sauté and stir-fry? (C)
- 1v. Why is a roux used when cooking? (C)
- 1w. What is spherification and how is it used with food? (C)
- 1x. Does the use of nitrogen fixation in plants affect humans? (P)
- 1y. Are there benefits to sauteing? (P)

Standard(s)

Connecticut Core Standards / Content Standards

NGSS: Science Performance Expectations (2017)

NGSS: MS Physical Science

MS.Structure and Properties of Matter

Performance Expectations

MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

MS.Chemical Reactions Performance Expectations

MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to

determine if a chemical reaction has occurred.

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Critical Content & Skills

What students must KNOW and be able to DO

Generalization 1

Students will know that:

- the four states of matter are liquid, solid, gas, and plasma
- an atom is the smallest unit of matter that makes up an element
- a molecule is a group of atoms bonded together
- a mixture is made up of two or more different substances that are not chemically combined
- a solution is a mixture in which two or more substances are well mixed (homogeneous). Best known when a solute is dissolved in a solvent
- oil and water don't naturally mix. This is because water molecules prefer to stick with other water molecules and they move as far from the oil molecules as possible. The same is true for the oil molecules, which are hydrophobic. As a result, oil and water molecules are happiest when furthest from each other so they separate into layers when mixed together. The drops of oil separate from the water droplets and touch one another then merge to form a single drop of oil. This happens until the two liquids completely separate into two layers. The more dense water is at the bottom and oil is on the top. These fluids are called immiscible because they don't dissolve in one another.
- an emulsion is made when making a vinaigrette of oil and vinegar(vinegar is mostly water). Adding another
 ingredient, such as mustard, will help bind the oil and vinegar together by forming a buffer between the oil
 and water. The molecules that make up the mustard are amphiphilic: one half of each molecule is hydrophilic
 and likes to be in water and the other half is hydrophobic and likes to be in oil. We've formed an emulsion
 and the ingredients appear to be mixed but aren't at the molecular level. The oil is still separated from the
 water but the mustard binds it all together.
- cream is an emulsion in that fat molecules are dispersed in the main component, water. Whipping up cream, however, shakes the system enough to invert the emulsion. Fat molecules become the continuous phase with particles of water dispersed within, creating butter!
- a supersaturated solution of sugar is unstable as there is more solute than can stay in liquid form. When the solution cools, sugar molecules combine with each other and form crystals. As the solution continues to cool, more and more molecules combine making hard candy.
- the three main leavening gases in baked goods are air, steam, and carbon dioxide.
- leavening agents cause baked goods to rise providing lightness and volume. Heat causes the gases to expand making them larger. This causes the cell walls to stretch increasing the volume. This, in turn, creates a strong structure preventing baked goods from collapsing.
- a fat molecule consists of two main components: glycerol and fatty acids. Since fats consist of three fatty acids and a glycerol, they are also called triacylglycerols or triglycerides. Fats can be unsaturated or saturated.
- in a fatty acid chain, if there are only single bonds between neighboring carbons in the hydrocarbon chain, the fatty acid is said to be saturated. Saturated fatty acids are saturated with hydrogen since single bonds increase the number of hydrogens on each carbon. Stearic acid and palmitic acid, which are commonly found in meat, are examples of saturated fats.
- when the hydrocarbon chain contains a double bond, the fatty acid is said to be unsaturated. If there is only one double bond in the molecule, then it is known as a monounsaturated fat; e.g. olive oil. If there is more than one double bond, then it is known as a polyunsaturated fat; e.g. canola oil.
- unsaturated fatty acids have one or more double bonds. Each double bond may be in a cis or trans configuration.
 - In the cis configuration, both hydrogens are on the same side of the hydrocarbon chain. In the trans configuration, the hydrogens are on opposite sides. A cis double bond causes a kink in the chain.
- most unsaturated fats are liquid at room temperature and are called oils. Unsaturated fats help to lower blood

cholesterol levels whereas saturated fats contribute to plaque formation in the arteries. Unsaturated fats or oils are usually of plant origin.

- in the food industry, oils are artificially hydrogenated to make them semi-solid and of a consistency desirable
 for many processed food products. During this hydrogenation process, gas is bubbled through oils to solidify
 them, and the double bonds of the cis-conformation in the hydrocarbon chain may be converted to double
 bonds in the trans-conformation.
- essential fatty acids are fatty acids required for biological processes, but not synthesized by the human body so they must be ingested.
 Omega-3 fatty acid, or alpha-linoleic acid (ALA), falls into this category and is one of only two fatty acids

known to be essential for humans (the other being omega-6 fatty acid, or linoleic acid).

- salmon, trout, and tuna are good sources of omega-3 fatty acids.
- butter is a concentrated fat produced from churning cow's milk or cream. When milk is churned, meaning stirred or beat in high intensity, the solid and liquid components within it split. The solid part that you get as a result of this process, is butter, and the liquid that is left is called buttermilk. So butter is made by churning cream until it separates into liquids (buttermilk) and solids (butterfat).
- butter isn't completely fat. Commercial butter that is commonly used in baking generally has over 80% fat with the rest being water that's emulsified into the fat.
- contrary to the name, sweet cream butter has not been sweetened. In general, sweet cream butter is better for spreading on toast, while unsalted butter is better for baking. This is so the exact amount of salt added to recipes is controlled.
- Using unsalted butter allows the baker to control the overall salt content of a recipe.
- it's best to use unsalted butter in things like buttercream frosting as the salt in salted butter can end up making delicate, sweet pastries taste overly salty.
- in North America, commercially sold butter must contain at least 80 percent butterfat, while European butters typically contain at least 82 percent and up to about 85 percent. The remaining contents of the butter's makeup includes water and milk solids. The lower the butterfat content, the more liquid (and less fat) is being added to the recipe; the higher the butterfat content, the more fat (and less liquid).
- moisture refers to the liquid content while moistness refers to the fat. Nearly all recipes call for both, but for different reasons. In general, fat (including that in butter) tenderizes baked goods. Liquids (again, including that in butter) help hydrate proteins (found in flours and starches), bind ingredients together, and also aid in moistening.
- butter in baking adds flavor, adds softness, adds moisture, aids in leavening, lengthens shelf-life.
- butter itself has many chemical and physical properties that play roles in the baking process. Starch and protein in flour will toughen dough, while sugar tenderizes it. Butter is mostly fat, so it tenderizes dough, however it still possesses 16 percent water, which will act to strengthen dough. This principle is used to make puff pastry, where the layers of dough folded on top of each other use the steam that evaporates from butter chunks in the dough to become airy and flaky in the oven.
- moisture and flavor might be the most obvious reasons to use butter in baked goods, but there are several other roles butter is playing as well. In things like cakes, cookies, and muffins, butter coats the proteins and starches during the mixing step and results in a more delicate crumb.
- in many of these types of pastries, the butter is creamed with the sugar before being mixed with other ingredients. Through this process, the sugar granules actually cut into the softened butter and air is forced into the mixture, which ultimately helps to leaven the pastry.
- even in recipes that do not call for the creaming method, butter assists in leavening by creating steam when
 placed in a hot oven. The liquid portion of butter adds moisture (as opposed to the moistness added from the
 fat), and in baked goods like puff pastry and croissants, the liquid in the butter begins to evaporate and
 create steam, which lifts the pastry as it bakes.
- temperature is a key factor in how butter behaves within a recipe and how it mixes with other ingredients in a batter or dough. Rarely does a recipe list butter without noting if it should be cold from the fridge, softened to room temperature, or even melted.
- with softened butter, the fat can be easily creamed together with sugar, or used to coat flour particles. This
 creates a more even distribution of fat throughout the dough or batter, yielding a tender final product. Like
 using room-temperature eggs, room-temperature butter creates a more homogenous batter and prevents
 buttercream from "breaking."
- softened butter should still be cool, but malleable. It should be able to hold its shape and still firm enough that if you press your finger into it, the impression is clean. It should not be squishy, oily, or appear melted. Toowarm or melted butter loses its ability to cream and hold air when beaten. This is best for making cakes. Butter that is at this state emulsifies with sugar easily and allows air to be incorporated into the batter. The air bubbles in your butter help your baked goods expand when baked and keep your cakes light, tender and soft. It also ensures that cakes don't shrink too much after they leave the oven.

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 air bubbles in your butter help your baked goods expand when baked and keep your cakes light, tender and
 soft. It also ensures that cakes don't shrink too much after they leave the oven.

- very cold butter is used in recipes where you don't want the butter to combine with the rest of the ingredients; you want it to stay cohesive. Pie dough, puff pastry, biscuits, and scones all typically call for very cold butter so it remains intact and unincorporated, which leads to distinct layers in the finished baked goods. When the little chunks of butter that are infused in your dough get exposed to heat, they melt and the water in the butter evaporates. As the water evaporates, it lifts the pastry, creates layers in the dough, and makes it flaky.
- melted butter doesn't have the ability to aerate so it makes baked goods more dense and chewy. This is often
 used in brownies.
- to sauté is to cook food quickly in a minimal amount of fat over relatively high heat. The word comes from the
 French verb sauter, which means "to jump," and describes not only how food reacts when placed in a hot
 pan but also the method of tossing the food in the pan. The term also refers to cooking tender cuts of meat
 (such as chicken breasts or filet mignon) in a small amount of fat over moderately high heat without frequent
 stirring—just flipping it over when one side is browned.
- the browning achieved by sautéing lends richness to meats and produce. And because the food is cooked quickly, the integrity of the flavor and texture remains intact; asparagus, for example, retains its slightly grassy punch, as well as a pleasing crisp-tender bite.
- it's important to use either a skillet (a wide pan with sloped sides) or sauté pan (a wide pan with straight sides) for this technique. Both have a large surface area, so food is less likely to become overcrowded. Choose a pan with a dense bottom that evenly distributes heat. Nonstick, anodized aluminum, and stainless steel options work well.
- sautéing is a basic cooking technique essential to many recipes. Soups and stews, for example, almost always begin with sautéed aromatics; sautéing browns the vegetables, which enhances the flavor of the soup. But it's also used to fully cook whole dishes-and do so quickly. Because it cooks food fast, sautéing keeps the flavors vivid. This is especially welcome with seasonal ingredients such as tender asparagus.
- whether it's meat or vegetables, time in the pan is brief, so it's important that the food be naturally tender. Cuts such as beef tenderloin, fish fillets, and chicken breasts are good candidates. Many tender vegetables, including baby artichokes, sugar snap peas, mushrooms, and bell peppers, lend themselves to this technique.
- cutting food to a uniform thickness and size ensures that it will cook evenly. Vegetables should be no larger than bite-sized, meat no larger than portion-sized.
- it's important to warm the pan over medium-high heat for a few minutes. It needs to be quite hot in order to cook the food properly. If the heat is too low, the food will end up releasing liquid and steaming rather than sautéing.
- fats such as butter, oil, or bacon fat are used to coat the food and prevent it from sticking to the pan, aid in browning, and add flavor. Once the pan is hot, add the fat, and swirl to coat the bottom of the pan. (Heating the fat with the pan may cause food to stick.) Heat the fat for 10 to 30 seconds—until oil shimmers or butter's foam subsides—and then add the food.
- in general, it's important to use fats that have a high smoke point—peanut oil, regular olive oil, canola oil, or rendered pork fat. Oils that have low smoke points, like extra-virgin olive oil and many nut and infused oils, lose their characteristic taste when heated to sautéing's high temperatures. It's OK to sauté with these oils—just remember that their flavor will not be as pungent.
- it's important to not overcrowd when sauteing: It's crucial that only one layer of food cooks in the pan at a time. When sauteing cuts of meat, there should be at least a half-inch between each piece. Food releases steam when cooking. If that steam doesn't have enough room to escape, it stays in the pan, and the food ends up steaming rather than sauteing and won't brown.
- when sautéing tender vegetables and bite-sized pieces of meat, it's important to stir frequently (but not constantly) to promote even browning and cooking.
- stir-frying and sautéing are techniques that share some similarities. Both methods cook food quickly in a small amount of fat. But stir-frying cooks food over intensely high heat, stirring constantly. Sautéing involves only moderately high heat, and the food is not in continuous motion.
- a roux is a cooked mixture of equal parts flour and fat. When flour is cooked in fat, the fat coats the flour's starch granules. This helps keep lumps from forming when the roux is combined with liquid such as milk or stock, yielding a silky-smooth, uniform sauce. Butter is commonly used as a fat, but other fats that may be used include oil, lard or rendered fat such as bacon, or pan drippings from a piece of roasted meat.
- there are several categories of roux: light roux (white and blonde roux), brown roux and dark roux. Different types of roux result depending on how long the flour and fat are cooked; the type of roux made depends on whether it will act more as a thickening agent or to impart flavor.
- white and blond roux are cooked for just enough time to eliminate the raw taste of the flour, but not so long that the roux starts to brown, about 3 to 5 minutes. White roux is used to thicken sauces such as béchamel, cheese sauces and white gravy, as well as creamy soups and chowders.
- brown and dark roux are cooked for longer and have more flavor. The longer the roux is cooked, the darker in color it gets and the more its toasty, nutty aromas and flavors will come out. A roux starts to brown after

about 6 or 7 minutes. Brown roux is classically used in perfect gravies. Dark roux is cooked longer, about 8 to 15 minutes, and is commonly used in Creole and Cajun cuisine to flavor dishes such as gumbo or jambalaya. Brown and dark roux are typically runnier in consistency and have less thickening properties than white or blond roux.

- corn starch can be used as a substitute for flour in a roux.
- spherification is the process of creating a gel around a liquid forming a gelled sphere with a liquid center. The molecules typically used for this technique are calcium and potassium. The two types are direct and reverse spherificiation. Direct spherification involves the membrane being made of a flavored base so it has more pure flavor. The reverse process allows for a liquid center that will remain liquid for a longer period of time and the spheres are bigger.
- nitrogen fixation is the process plants undergo in order to make the nitrogen around them usable. They do this with the help of bacteria that are found in the roots. The bacteria synthesizes the nitrogen in the surrounding air into an organic form the plant can use. Nitrogen is a key component in proteins which means legumes, which can easily fix nitrogen because of their symbiotic relationship with bacteria, are a great source of protein. When humans eat the legumes, the protein is then transferred so the process of nitrogen fixation ultimately helps humans.

Students will be able to:

- explain the difference between an atom, molecule, mixture, and solution
- explain what an emulsion is and the importance of emulsifiers in cooking.
- explain what a fat is and the difference between unsaturated, saturated, trans, and polyunsaturated fats.
- explain what butter is, its function, the types, and what they are best used for in cooking and baking.
- explain what it means to sauté and the process of sautéing.
- explain what a roux is, the types of roux, and their function in cooking.
- explain the process of spherification and how it is used in cooking.
- explain the importance of nitrogen fixation in legumes.

Core Learning Activities

Generalization 1:

- Mousse leavening (air) and emulsion investigating air as a leavening agent
- 2. Making fudge investigating sugar
- 3. Making cotton candy investigating sugar
- 4. Mac and Cheese Activity observe the magic of a roux.
- 5. Making Fried Rice saute technique
- 6. Making Soft Pretzels investigation flour/gluten
- 7. Gluten and Dairy Free Brownies- gluten and diary free
- 8. Making Toll House cookies- culminating activity

Assessments



Resources

Professional & Student

Lipid Molecules - Introduction

Biochemistry in the news: trans fatty acids

Baking School Day 6: All About Butter and Baking

What does butter do in baking?

The surprising science of butter

cooking class: sauteing

How to make a roux - Food Network

Student Learning Expectation & 21st Century Skills

Information Literacy
Critical Thinking
Spoken Communication
Written Performance

Interdisciplinary Connections

This work has a connection to 6th grade curriculum as it involves discussion of atoms, molecules, mixtures, and solutions. It also connects to math when measuring and to literacy when students analyze data and explain the science behind what they observe.

In addition, there is a connection to the high school culinary courses in that the students are learning about the function of fat/butter in cooking and baking. This they will use if they take the culinary courses in high school.



Unit Planner: Food Preservation Kitchen Science Gr. 8

Newtown Middle School / 2022-2023 / Grade 8 / Science / Kitchen Science Gr. 8 (Pilot) / Week 1 - Week 20

Last Updated: <u>Tuesday, May 2, 2023</u> by Elizabeth Jaciofano

Food Preservation

Bradley, Nancy; Iaciofano, Elizabeth

- Unit Planner
- Lesson Planner

Concept-Based Unit Development Graphic Organizer (Download)

Unit Web Template (Optional)

Concepts / Conceptual Lens

Please attach your completed Unit Web Template here

Lens: Change

Concepts: Structure, Process, Growth, Function, Health

G

Generalizations / Enduring Understandings

- 1. Following specific processes for preserving, storing, and cooking food reduces the likelihood of bacterial growth which helps maintain health.
- 2. Sterilization of equipment is a critical process used to prevent the growth of microorganisms when canning.

Guiding Questions

Please identify the type of question: (F) Factual, (C) Conceptual, (P) Provocative [Debatable]

- 1a. What is the function of food preservation? (F)
- 1b. What are the most common ways to preserve food? (F)
- 1c. What is the purpose of pasteurization?(F)
- 1d. What happens to food when heated and how does this relate to prevention of illness from a microorganism? (C)
- 1e. Why is refrigeration/freezing important when safely storing food? (C)
- 1f. What is fermentation and how does it preserve food? (C)
- 1g. What is the purpose of salt or sugar curing?(C)
- 1h. How does irradiation preserve food? (C)
- 1i. What role do alcohol, olive oil, and vinegar play in food preservation? (C)
- 1j. Is bacteria good or bad? Why? (P)

2a. How does one safely can food? (F)

2b. Why is it important to properly can food? (C)

Standard(s)

Connecticut Core Standards / Content Standards

CCSS: Literacy in History/Social Studies, Science, & Technical Subjects 6-12

CCSS: Grades 6-8

Capacities of the Literate Individual

Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, & Language

They demonstrate independence.

They build strong content knowledge.

They value evidence.

They use technology and digital media strategically and capably.

Reading: Science & Technical Subjects

Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

RST.6-8.1. Cite specific textual evidence to support analysis of science and technical texts.

Writing

2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

WHST.6-8.2e. Establish and maintain a formal style and objective tone.

Production and Distribution of Writing

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.6-8.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Research to Build and Present Knowledge

7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

WHST.6-8.7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

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Critical Content & Skills

What students must KNOW and be able to DO

Generalization 1

Students will know that:

- the most common methods to preserve food are drying, refrigeration, fermentation, canning, pasteurization, freezing, irradiation, and the adding of chemicals (sugar/salt curing, alcohol, vinegar, olive oil). These all serve the function of reducing the growth of microorganisms. The principal objective of food preservation is to increase its shelf life retaining original nutritional values, color, texture, and flavor.
- before cooking food, it is filled with microorganisms (bacteria and fungi) that can be harmful if ingested. Small
 amounts of heat can cause the proteins within the microorganisms to malfunction and the organism dies.
 Most live and multiply in a temperature range of a few degrees above freezing to 122 degrees F. At cooler
 temperatures, it is too cold for microbes to survive and grow. This is why freezing and refrigeration are
 effective ways to preserve food.
- drying foods inhibits the growth of bacteria, yeasts, and mold through the removal of moisture content. Electric
 food dehydrators, ovens, and freeze-drying are now speeding up the process that was traditionally done by
 sun and air. Foods that dehydrate well are fruits, vegetables, legumes, spices, meat, and fish. Dry rice does
 not go bad but cooked rice does because it contains water and organisms grow in wet environments.
- cold food storage (refrigeration) is the simplest food preservation method. It occurs in refrigerators and cool, dark places such as root cellars, unheated basements, and pantries. Cooling preserves food by slowing down the growth of microorganisms that cause the food to spoil.
- fermentation is a process where food is produced with the help of microbes (yeast and some bacteria). Fermentation is widely spread across cultures and has been for a very long time. The reason is the preservative properties that can be achieved with the right microbes. In the time before refrigerators and freezers, fermentation was critical to ensuring a healthy food supply. Fermentation comes in two forms: alcohol production by yeast (examples: bread, wine) and lactic acid generation from bacteria (example: sauerkraut). In sauerkraut, salt is added to cabbage, mixed well, and tightly packed in a jar in order to get rid of all the air and make the environment free of oxygen. It's important to make sure the cabbage is covered by the brine (salt solution). The lactic acid bacteria present in the cabbage produce lactic acid, which is toxic to harmful bacteria but not to themselves. This makes them grow better which makes the environment even more acidic thereby killing more harmful bacteria. Slowly, the lactic acid bacteria have created an environment where they can dominate and hog the food source. As a result, harmful spoilage bacteria cannot grow.
- pasteurization involves adding just enough heat so the microbes die but the food remains unaltered. The higher the temperature, the shorter the time and vice versa.
- freezing foods uses little specialized equipment, while preserving fresh flavors and textures. Freezing slows the growth of microorganisms and enzymes that can cause food spoilage. For the best results, freeze room-temperature foods, remove all the air from the freezer bag, and consume within 6 months of freezing. Sealing frozen produce in vacuum-sealed bags prevents ice crystals from forming and can extend the shelf life of food. Freeze-drying is a low-temperature dehydration process that involves freezing food and removing the ice by sublimation—turning ice into vapor. This method can be done in a freezer (takes several weeks), on dry ice, or using a modern freeze-dryer unit, which can take less than 24 hours.
- food irradiation (the application of ionizing radiation to food) is a technology that improves the safety and extends the shelf life of foods by reducing or eliminating microorganisms and insects. Like pasteurizing milk and canning fruits and vegetables, irradiation can make food safer for the consumer. Irradiation does not make foods radioactive, compromise nutritional quality, or noticeably change the taste, texture, or appearance of food. In fact, any changes made by irradiation are so minimal that it is not easy to tell if a food has been irradiated.
- the purpose of irradiation is to effectively eliminate organisms that cause foodborne illness, such as Salmonella and Escherichia coli (E. coli), preservation to destroy or inactivate organisms that cause spoilage and decomposition and extend the shelf life of foods, insect control to destroy insects in or on tropical fruits imported into the United States. Irradiation also decreases the need for other pest-control practices that may harm the fruit, delay of sprouting and ripening to inhibit sprouting (e.g., potatoes) and delay ripening of fruit to increase longevity.
- before industrial refrigeration, most foods were cured using sugar, salt, or a mixture of both. Salt and sugar
 reduce the water content and inhibits microbial growth in meats, fruits, and vegetables aiding in preservation.
 Common sugar-preserved foods are jams and jellies, while salt cod, salt pork, corned beef, and bacon are
 common foods preserved with salt.
- fruit has a long history of getting preserved in alcohol. During the eighteenth century in Europe, fruits like
 peaches, cherries, and apricots were submerged in brandy and served as dessert after a meal. Alcohol

draws water out of food, similar to salt and sugar, inhibiting microbial growth.

- vinegar pickling creates a high acid environment that kills off microbes and causes food to change in flavor and texture. Vinegar, salt, and sugar are heated and added to fruit or vegetables to make pickles of cucumber, okra, apples, beets, peppers, carrots, onions, cauliflower, green beans, and plums.
- extra-virgin olive oil is a natural preservative that prevents spoilage by isolating food from air, providing a seal that can slow down oxidation and molding. It is used for preserving fresh herbs, vegetables, and fish. It's important to keep food safety in mind when storing vegetables such as garlic, mushrooms, chili peppers, or herbs in oil—these low-acid foods can be a source of bacteria and should be stored in the refrigerator as a precaution.

Students will be able to:

- · identify the methods to preserve food
- · explain the overall function of preserving food
- explain each method to preserve food and its specific purpose

Generalization 2

Students will know that:

• canning is the process involves placing foods in canning jars and heating them to a high temperature to destroy the microorganisms that cause food to spoil. During the heating process, air is pushed out of the jar, and as the cans cool, a vacuum seal forms. Canning in a bath of boiling water is ideal for high-acid foods, like fruits and fruit juice, pickled vegetables, salsa, <u>chutneys</u>, vinegars, and condiments. Water bath canning requires extended cooking time at a low temperature temperature to destroys the mold, yeast, and enzymes that cause spoilage while making a vacuum seal for long-term storage. The second primary type of home canning, pressure canning uses high temperatures (240°F) and special equipment to preserve low-acid foods, like vegetables, dairy, meat and seafood, legumes, and soups.

Students will be able to:

explain the purpose of canning safely

Core Learning Activities

Generalization 1 and 2: The way the students learn this content is by completing a long-term research assignment.

Research assignment:

<u>food preservation research assignment</u> - students are given a choice of product: can be done as a slide show or they can create a model.

Assessments 8 Food Preservation Research Assignment	Resources Professional & Student Books: The Food Safety Book by Joe Kivett and Dr. Mark Tamplin with Dr. Gerald J. Kivett, Copywrite 2016
	Websites: How to sterilize canning jars using boiling water Natural Center for Food Preservation Guide to Food Preservation Food Irradiation: What You Need to Know.
Student Learning Expectation & 21st Century Skills Information Literacy Critical Thinking Spoken Communication Written Performance	Interdisciplinary Connections This unit connects to literacy when students explain the science behind what they observe and to health when discussing food preservation.

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Proposed Standing Committee Assignments

6/27/2023 - 12/31/2023

CIP/Facilities/Finance Committee Alison Plante – Chair Deborra Zukowski

Communication Committee Don Ramsey – Chair Dan Cruson

Contract Negotiation Committee
Dan Cruson
Don Ramsey
Deborra Zukowski

Curriculum and Instruction Committee John Vouros – Chair Don Ramsey

Policy Committee Dan Cruson – Chair Deborra Zukowski Todd Higgins

Diversity, Equity and Inclusion Committee Alison Plante – Chair Dan Cruson Deborra Zukowski

Social Emotional Health and Wellness Committee On hold

Liaisons Schools

NHS: John Vouros NMS: Don Ramsey RIS: Shannon Tomai HAW: Todd Higgins HOM: Dan Cruson MG: Alison Plante

SHS: Deborra Zukowski

Other Boards/Committees
NFT Climate and Culture Committee
John Vouros
Don Ramsey

Para Climate and Culture Committee John Vouros

District Safety and Security Team Dan Cruson

EdAdvance Alison Plante

CABE Dan Cruson

Connecticut State Department of Education

Office of Student Supports and Organizational Effectiveness

Bureau of Health/Nutrition, Family Services and Adult Education

Connecticut Primary Mental Health Grant Program July 1, 2023- June 30, 2025

Grants must be in LEA Superintendent Approved status by 11:59 P.M. by June 30, 2023, in the eGMS

The Primary Mental Health grant application must be completed on-line in the eGMS. No paper applications are accepted.

Purpose: To assist Connecticut school districts to better serve at-risk primary grade children through the availability of an early intervention mental health program for the detection and prevention of emotional, behavioral and learning problems.

This program is authorized pursuant to Sections 10-76t through 10-76w of the Connecticut General Statutes.

CONNECTICUT STATE DEPARTMENT OF EDUCATION



Charlene Russell-Tucker Commissioner of Education

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THE CONNECTICUT STATE DEPARTMENT OF EDUCATION IS AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER.

General Information

Legal Authority

Sections 10-76t through 10-76w (inclusive) of the Connecticut General Statutes (C.G.S.) direct the Connecticut State Department of Education (CSDE) to establish a grant program to provide funds to local and regional boards of education for the establishment of a school-based Primary Mental Health Program (PMHP) for the detection and prevention of emotional, behavioral and learning problems in public school children in kindergarten through Grade 3.

In determining if a board of education shall be granted funds, the Commissioner of Education shall consider, but not be limited to, the following factors:

- availability in the school and community of professional, paraprofessional, and other program staff. Paraprofessional staff are selected on the basis of interpersonal and experiential qualities, rather than educational background;
- availability of space to accommodate the program in an elementary school building;
- demonstration of strong support by administrative personnel, teaching staff, pupil personnel staff, and local community mental health centers;
- reasonable evidence of future stability of the program (i.e., readiness of new districts and ongoing support for continuing districts); and
- the number of children enrolled in grades kindergarten through Grade 3 inclusive, in a school under the jurisdiction of such board of education experiencing behavioral, disciplinary, or early school adjustment difficulties.

Eligible Applicants

Local or regional boards of education may apply for these grants. A PMHP will be supported under the terms of this announcement must be school-based and focus on the provision of services to children kindergarten through Grade 3.

Applicants Should Take Special Note of the Following Criteria:

- 1. New applicants must operate the standard PMHP model hereafter called "Primary Project" (as outlined on pages 3–4).
- 2. If a school district has previously received state funding at any time to offer Primary Project (hereafter called "Continuing Districts") the district may reapply if, and only if, the district offers Primary Project minimally at the previously funded level, and:
 - a. expands Primary Project to offer one or more additional schools; or
 - b. implements or continues a Complementary Mental Health Program Component (CMHPC) at the same school (as outlined on page 5).
- 3. The services provided by school-based mental health professionals must be provided as in-kind contribution by the school district and not included in the proposed budget.

Purpose

The focus of this grant is on the implementation of the general education, school-based early detection, and intervention programs, Primary Project that serves children in kindergarten through Grade 3. Research shows that early difficulties adjusting to school environments can lead to decrease academic and social-emotional functioning later in life. Young children who have difficulty adjusting to school may be withdrawn, show a lack of engagement, or struggle with peer and adult relationships. Primary Project's early intervention program aims to disrupt these outcomes by pairing young students with a trained Child Associate (CA) to provide one-on-one play-based support under the supervision of a school or community-based mental health professional. Continuing districts are encouraged to implement complementary mental health components to enhance the impact of the Primary Project.

Application Priorities

Preference will be granted according to the following criteria:

1. Applicants who have never before been awarded funding to support PMHP activities will receive a bonus of five points in the proposal scoring.

2. Districts that indicate in their proposal how Primary Project will create opportunities for parent involvement and support components that exceed the minimum requirements may receive up to a bonus of five points in the proposal scoring.

Districts that provide evidence of future stability of the program and its personnel
through a continuation plan that includes explicit school board support for the continued
implementation of Primary Project will receive a bonus of five points in the proposal
scoring.

4. Priority School Districts that apply will be awarded a five-point bonus in the proposal scoring.

5. Alliance School Districts that apply will be awarded a five-point bonus in the proposal scoring.

Application Requirements

All applications submitted become the property of the CSDE and become part of the public domain. The CSDE reserves the right to make necessary policy and programmatic changes after proposals are submitted and to negotiate awards with potential recipients.

Review Process and Criteria

The CSDE will convene a panel to review all completed applications received by the due date. Grant awards will be negotiated and accepted with modifications, if necessary, in time for final award notification by late August, 2023. Each application will be rated according to the criteria provided within the scoring rubric.

The CSDE will notify applicants in writing of the acceptance or rejection of their proposals. If a proposal is selected for funding, the Bureau of Health/Nutrition, Family Services and Adult Education will initiate a grant award letter. The level of funding and effective dates of the projects will be set forth in the notification of the grant award. All grant awards are subject to availability of state funds. Grants are not final until award letters are executed.

Technical Assistance and Management

Agnes Quinones, CSDE Education Consultant, is the Program Manager. Questions regarding this RFP may be directed to her at 860-807-2126 or by email at agnes.quinones@ct.gov. The CSDE reserves the right to monitor program progress at least annually, including examination and approval of all reports and data collection.

Grant Awards

The estimated funding available statewide for the PMHP grant for Fiscal Year (FY) 2024 is \$345,288. There is no minimum grant award. The maximum grant award for both new and continuing districts is \$20,000. Continuing districts <u>must</u> apply a *minimum* of 80 percent of state funds to Primary Project. Therefore, a *maximum* of 20 percent of state funds <u>may</u> be designated to the CMHC.

The amount designated for the CMHPC should be recorded on the PMHP Budget Worksheet for Continuing Districts.

The grant is funded for two years: fiscal years 2023-2024 and 2024-2025. Funding for each year is subject to the state budget appropriations. Grantees will be required to submit an End-of-Year Report (EYR) for year 1 and a budget for year 2 prior to receiving year two funding. The second year of funding is also contingent upon adequate progress toward program goals and use of funds in the first year.

Management Control of the Program

The grantee has complete management responsibility for this grant. While the CSDE staff may be consulted for their expertise, they will not be directly responsible for the selection of subgrantees or vendors, nor will they be directly involved in the expenditure and payment of funds.

For continuing applicants, the school district must contribute at least \$5,000.

Salaries of school personnel (e.g., administrators and school mental health professionals) may not be included as part of the school district's contribution.

Grant funds may not be used to support staff work beyond Primary Project activities as indicated in the approved district's grant proposal, nor may funds be used for student field placement stipends.

The CSDE reserves the right to make awards under this program without discussion with the applicants. Therefore, applications should represent the best effort from both a technical and cost standpoint.

Primary Mental Health Grant Program Description

Description – Primary Project

Primary Project is a Tier 2 school-based program for children displaying school adjustment problems in the mild or moderate range (for instance, withdrawal or shy behaviors, mild acting out behaviors, and potential learning difficulties). It is not a program for children who have severe social, emotional, or behavioral difficulties. Primary Project aims at enhancing social, emotional, behavioral, and learning skills while reducing social, emotional, and school adjustment difficulties in kindergarten through 3rd grade children. Targeted outcomes for these children include increased task orientation, behavior control, assertiveness, and peer social skills.

General Requirements

- 1. Demonstrated support among a school's administrative, instructional, and pupil services staff.
- 2. For continuing districts, the implementation of a CMHPC (enhancing program support and stability through opportunities for improving pro-social behavior, school adjustment, early detection and/or screening and family support for education) or expansion to an additional school.

3. Availability of space to accommodate the program (i.e., playroom).

- 4. Employment of a CA a caring, responsible person with proven ability to relate well to children and provide direct services to children, as described in the following section.
- 5. Availability of one or more school mental health professionals to supervise the acceptance of children into the program (i.e., school psychologist, school social worker, and school counselor).
- 6. Availability of mental health professionals to select, train, and supervise paraprofessionals in program implementation. The mental health professional will provide the paraprofessional with a minimum of one hour of direct supervision per week at a designated time in addition to consultation on an "as needed" basis.
- 7. Commitment to staff development for the CA through attendance at state level training. Attendance by the CA and program supervisor at two full-day trainings, as well as other trainings and technical assistance convening's that may be planned in the future.
- 8. Commitment to staff development for mental health professionals (who provide supervision to the CA) through attendance at state level training (contingent upon annual appropriations and availability of such training).
- Systematic screening to identify children experiencing early school adjustment problems, supervised by the Mental Health Professional, using the Teacher-Child Rating Scale (T-CRS) (a nationally normed 32-item measure specifically designed for use by teachers to assess children's school and social behaviors), or other comparable measure as deemed appropriate by the CSDE.
- 10. Establish specific goals for individual children that evolve from the areas in which the child is identified to have difficulties.
- 11. Provision of individually focused child-centered play and the promotion of social development, improved self-concept, and adjustment to school.
- 12. Evaluation of student outcomes through the use of data collection measures identified by the CSDE (e.g., office referral and suspensions and academic performance).
- Timely submission of four program updates (two per semester) and an end-of-year report following the formats provided by the CSDE.
- 14. Monitoring of student progress towards goal achievement through informal parent/teacher conferences and formal progress and termination conferences.
- 15. A plan designed to ensure parent involvement that includes:
 - a. Signed permission for student participation; and
 - b. Parent participation in program progress, termination conferences and evaluation to learn about their child's development and their needs.
- 16. Coordination of services with, and referrals of children to, community agencies that provide child and family services.
- 17. Linkages with other school-based prevention, early intervention programs, and supports including referrals for children not meeting the requirements for direct services through this program.
- 18. Evidence of future program sustainability.

- 19. Secure necessary signed releases/permission from the parents and/or legal guardians of student participants to allow the CSDE program manager and/or the CSDE designee to observe student(s) engaged in Primary Project activities/sessions during site visits.
- 20. Secure necessary releases/permission signed by parents and/or legal guardian(s) of student participants to allow the CSDE access to all Primary Project pre- and post-measure data (electronic and hard copy formats) gathered and maintained via the COMET Data Collection and Management System or DESSA.

Direct Services Provided by Child Associates

Research has shown that Primary Project has a positive effect on children's adjustment to school and sense of well-being. Essential to this model is the establishment of a personal relationship with the student who comes to trust and feel accepted by the CA. This relationship is established as:

- each child is seen on an individual basis;
- each child meets with the CA on a weekly basis outside of the classroom;
- each child engages in self-directed expressive play; and
- each child is provided direct services for at least 12-15 weeks.

Some latitude in the service delivery model is permissible. Acceptable practices are:

- following a child-centered therapeutic approach, children are allowed to choose their activities during play sessions;
- some children (i.e., those who will benefit) transition from individual to small group/play pair sessions. These sessions are initiated by the team and delivered after 12-15 individual sessions;
- the CA occasionally visits classrooms to become known to students and to become part of the school community; and
- the CA is familiar with the child led play skills/practices and uses these skills consistently during sessions.

Programs that engage in the following unacceptable practices, which are <u>contrary</u> to the program's core concepts, <u>will not be funded</u>:

- the service model regularly involves classroom-based instruction or coaching
- each child's weekly sessions may be cancelled as a punishment; and
- the CA is used for general duties, disciplinary activities, academic instruction, office assistance, or other activities unrelated to the program.

Complementary Mental Health Program Component (CMHPC)

Continuing districts may apply for PMHP funding only if the district continues to offer Primary Project at a comparable level and either expands to one or more additional schools or implements (or continues) a CMHPC at the same school. A CMHPC is an extension of Primary Project and provides services such as positive behavioral supports and early detection and intervention services (i.e., for students at elevated risk and primarily in kindergarten through Grade 3) that enhance the benefits of Primary Project through opportunities for improving pro-social behavior, school adjustment, early detection, and/or screening and family support for education.

Examples include early detection and/or screening activities and one or more of the following:

- collaboration to develop and/or increase the availability of community-based resources¹;
- classroom and schoolwide positive behavioral interventions;
- curriculum for teaching social skills or promoting social-emotional development;
- teaching self-control strategies;
- parent education/support to promote pro-social behavior and development;
- parent-to-parent mentoring/outreach program; and
- programmatic approaches to promoting a positive, supportive school environment.

Selecting more than one of the above programs will not improve the chances of being funded. More importantly, ensure that the program can be effectively designed and delivered with the resources available.

Minimum Requirements

- The CMHPC must be an extension of Primary Project and support its overarching goals and objectives and have additional capacity beyond any CMHPC in previous years.
- 2. For continuing applicants, the school district must contribute at least \$5,000.
- 3. The district must meet the requirement of providing a CMHPC by continuing to offer activities that meet the description above.
- 4. The district must provide evidence that the CMHPC uses an approach and/or practices that are known to be evidence-based or research-based.
- 5. The school(s) should have a building-based team or committee to coordinate and monitor Primary Project and related programs. Ideally, this should be an existing team.

BUDGET

Budget

Enter state funds budget using eGMS Budget Details. In addition to the budget detail narratives, use the Personnel Costs page to specify the time commitment for all project staff, including those not paid for by the grant. All continuing districts must complete the Local Contribution Budget page, specifying the local contribution. Line items in budget category 100 are to be itemized on a per diem basis for each individual.

Budget Detail Narratives

Provide a detailed description of the proposed use of funds for each budget detail Wherever applicable, cite local policy and/or contractual basis for amounts requested. Examples:

¹ One recommended means of developing community resources is through the local Community Collaborative. For more information, see Connecting to Care CT at: https://www.connectingtocarect.org/collaboratives/

- 1. "The salary amount is projected at the first step of the Education Aides salary range established in the local education agency's collective bargaining agreement."
- 2. "Line 322 represents the contracted services of a workshop presenter who will be paid x dollars per day for y days."

Please respond to this task with as much detail as possible in order to avoid requests for more information, which may delay the granting process.

BUDGET OBJECT CODES

This list is a description of the object codes in the budget. The list is provided to help you in designing your budget for the program.

- 100 **Personal Services Salaries**. Amounts paid to both permanent and temporary grantee employees, including personnel substituting for those in permanent positions. This includes gross salary for personal services rendered while on the payroll of the grantees.
- Personal Services Employee Benefits. Amounts paid by the grantee on behalf of the employees whose salaries are reported in line 100. These amounts are not included in the gross salary but are in addition to that amount. Such payments are fringe benefit payments and, while not paid directly to employees, nevertheless are part of the cost of personal services. Included are the employer's cost of group insurance, social security contribution, retirement contribution, tuition reimbursement, unemployment compensation and workmen's compensation insurance.
- In-service. (Instructional Program Improvement Services). Payments for services performed by persons qualified to assist program personnel and/or teachers to enhance program quality or effectiveness. This category includes curriculum consultants, inservice training specialists, etc., who are not on the grantee payroll.
- Parent Activities. Expenditures related to services for parenting including workshop presenters, counseling services, baby-sitting services, and overall seminar/workshop costs.
- Other Purchased Services. Amounts paid for services rendered by organizations or personnel not on the payroll of the grantee (separate from Professional and Technical Services or Property Services). While a product may or may not result from the transaction, the primary reason for the purchase is the service provided.
- Supplies. Amounts paid for items that are consumed, worn out, or deteriorated through use, or items that lose their identity through fabrication or incorporation into different or more complex units or substances.
- Property. Expenditures for acquiring fixed assets, including land or existing buildings, improvements of grounds, initial equipment, additional equipment, and replacement of equipment.
 - In accordance with the Connecticut State Comptroller's definition equipment, included in this category are all items of equipment (machinery, tools, furniture, vehicles, apparatus,

etc.) with a value of over \$5,000.00 and the useful life of more than one year and data processing equipment that has unit price under \$5,000.00 and a useful life of not less than five years

Other Application Requirements

A. Obligations of Grantees

All bidders are hereby notified that the grant to be awarded is subject to contract compliance requirements as set forth in Sections 4a-60 and 60a of the C.G.S. and Sections 46a-68j-23 et seq. of the Regulations of Connecticut State Agencies (R.C.S.A.).

Furthermore, the grantee must submit periodic reports of its employment and subcontracting practices in such form, in such manner, and in such time as may be prescribed by the Commission on Human Rights and Opportunities (CHRO).

B. Freedom of Information Act

All of the information contained in a proposal submitted in response to this RFP is subject to the provisions of the Freedom of Information Act (FOIA) Sections 1-200 et seq. The FOIA, declares that except as provided by federal law or state statute, records maintained or kept on file by any public agency (as defined in the statute) are public records and every person has the right to inspect such records and receive a copy of such records.

Board of Education Newtown, Connecticut

Minutes of the Board of Education meeting held on June 1, 2023, at 7:00 p.m. in the Newtown High School auditorium.

D. Zukowski, Chair C. Melillo J. Vouros, Vice Chair A. Uberti

D. Ramsey, Secretary (absent) T. Vadas (absent)

D. Cruson 50 Staff
A. Plante 160 Public
A. Plante 7 Press

K. Kunzweiler (absent)D. Godino (absent)

Ms. Zukowski called the meeting to order at 7:00 p.m.

Item 1 – Pledge of Allegiance

Item 2 - Public Participation

Ms. Zukowski said public participation would be limited to 30 minutes and those who have not yet addressed the Board would be allowed to speak first.

Please click <u>here</u> to view the public participation.

Kate Shirk spoke about book challenges.

Insa Oldach, spoke about book challenges.

Naiya Amin spoke about book challenges.

Jess Powers, 11 Whitewood Road, spoke about book challenges

Jennifer Wheeler, 13 Gopher Road, spoke about book challenges.

Jenifer Killin, 71 Sugar Lane, spoke about book challenges.

Ray Horvath, 1 Crabapple Lane, spoke about book challenges.

Alison Powers spoke about book challenges.

Joseph Crosby spoke about book challenges.

Treasa O'Sullivan spoke about book challenges.

El Glassman spoke about book challenges.

Dan Grossman, 62 Pine Tree Hill Road, spoke about book challenges.

Dan Evans, 21 Georges Hill Road, spoke about book challenges.

Evelyn Weinberger, 17 Sweetbriar Lane, spoke about book challenges.

Jennifer Nicoletti, Pilgrims Trail, spoke about book challenges.

Timothy Stan, 6 Monitor Hill Road, spoke book challenges.

Kris Powers, 76 High Rock Road, spoke about book challenges.

MOTION: Mrs. Plante moved that the Board of Education accept the recommendation of the Special Review Committee that *Flamer* and *Blankets* remain in circulation in the Newtown High School library provided that the administration develop a process to address individual parent or guardian concerns related to their child(ren). Mr. Ramsey seconded.

Mrs. Plante spoke to her motion and reported that our attorney advised us that Robert's Rules and Board policy prevented the identical motion made at the May 16 meeting from being made tonight. This solution does not put the district at risk for litigation and asks the administration to implement a process that will support the choices of individual parents and guardians to make individual choices for their own children by charging our administrators with designing and implementing a more robust process. She is confident they will make this work. This solution supports our educators and is a vote of confidence for the Special Review Committee. It also

supports Mrs. Uberti and Mr. Melillo who have engaged in this process with thoughtfulness, open-mindedness, and patience that is to be commended. We are lucky to have them leading the district. This solution also supports the Board of Education because it shows we follow our own policies, respects our experts and serves all of our constituents. This solution leaves the operational authority where it belongs which is with our administrators. She is hopeful the Board will support this motion.

Mr. Cruson said it was not the motion he wanted, but understands the legal judgement. There's a link to the retention of the books with coming up with a procedure and is concerned if it's not done in a timely manner the books would be removed.

Mrs. Plante noted that we discussed that with Board counsel who said these books will remain on the shelf if we don't have a process in place.

Mr. Cruson preferred that it was an operational decision and not a Board decision. He knows they will come up with a procedure.

Mr. Vouros thanked Mr. Melillo and Mrs. Uberti and a concerned parent who spoke to Mrs. Uberti. Charging this motion to the administration will make parents know this will be addressed. He asked everyone to focus energies on summer with their children.

Mr. Ramsey appreciated the passion tonight as well as letters to the Board. This is a complex issue and appreciated going into middle and high school libraries to see what goes on during the day. He appreciates the motion and will vote in favor of it.

Ms. Zukowski thanked Mr. SanAngelo and Ms. Zandonella for the time she spent in their libraries. She knows the value that books bring and the trauma that books may bring to others. This motion deals with both. She thanked Mrs. Plante for this motion.

Mr. Cruson said this has been his personal position and is not political.

Motion passes unanimously.

Mr. Cruson stated the student engagement was positive through this and he appreciates that.

Mr. Ramsey said parents should have an active interest in their children's education. This issue could have been handled at the lowest level. Students should initiate the communication and be open and parents be receptive to their students.

Mrs. Plante thanked the educators in this process, the library media specialists, and members of the Special Review Committee.

Mr. Melillo thanked everyone who supported and didn't support the recommendation of the Special Review Committee because it was important to hear both sides and perspectives. He thanked the students and reached out to the Newtown community that we need to come together and ensure we are better together and there is no room for disparaging opinions that we don't like and to respect everyone's opinion.

Mrs. Uberti stated that all of us always tries to listen to students and parents and always try to do work with families to do what is best for students. To our students, you live in a different world compared to your elders. Maybe we need to be clearer why books are there. We want to

heal and she sees this as a place to move forward and reunite the community. She hopes they support the Board in their efforts.

Ms. Zukowski spoke about the history of this issue, the results of the Special Review Committee, and the difference of opinions on the Board. She thanked the Board for their care for our students. She also visited both libraries and felt she had enough information to move forward with the book challenge. We need to come together in the spirit of nicer in Newtown.

Item 4 - Public Participation

Kate McGrady, 26 Philo Curtis Road, spoke about the book challenges and referred to the Board meeting October 12, 2022 regarding the discussion of roles of Board members.

Linda O'Sullivan, 11 Farmery Lane, spoke about her daughter.

MOTION: Mr. Vouros moved to adjourn. Mrs. Plante seconded. Motion passes unanimously.

Item 5 – Adjournment

The meeting adjourned at 8:21 p.m.

Respectfully submitted:

Donald Ramsey Secretary

Board of Education Newtown, Connecticut

Minutes of the Board of Education meeting held on June 6, 2023 at 6:30 p.m. in the Reed Intermediate School Library.

D. Zukowski, Chair C. Melillo
J. Vouros, Vice Chair A. Uberti

D. Ramsey, Secretary T. Vadas (8:00 p.m.)

D. Cruson 40 Staff
A. Plante 50 Public
K. Kunzweiler 1 Press
D. Godino

Mr. Vouros called the meeting to order at 6:05 p.m.

MOTION: Mrs. Plante moved that the Board of Education go into executive session for a discussion and possible action on the appointment of the Newtown High School Assistant Principal and invited Mr. Melillo. Mr. Ramsey seconded. Motion passes unanimously.

Item 1 – Executive Session

The Board met regarding the Newtown High School Assistant Principal position.

Item 2 - Pledge of Allegiance

Item 3 - Appointment of Newtown High School Assistant Principal

MOTION: Mrs. Plante moved that the Board of Education accept the recommendation of the Superintendent and appoint Paul Ribeiro Assistant Principal of Newtown High School with a start date on or about July 3, 2023. Mr. Cruson seconded. Motion passes unanimously.

Mr. Melillo said there were 107 applicants for this position. It was a rigorous process but Paul rose to the top. He currently is assistant principal at Darien High School and comes to us with a lot of experience. He lives in Newtown and we are lucky to have him. Congratulations and he looks forward to working with him.

Item 4 - Celebration of Excellence

Top 5% of the Newtown High School 2023 Graduating Class:

Dr. Longobucco introduced the following students who are in the top 5% of the 2023 graduating class. Those honored include Logan Akbas, Paige Armstrong, Connor Dullinger, Jennifer Dushi, Daniel Godino, Olivia Guizzo, Brooke Kinsey, Anna Ochs, Kate Shirk, Madison Singlak, Andrew Sposato, Nicholas Tetreault, Connor Troy, Siddarth Vakacherla, Lauren Jacobs, the Salutatorian, and Kirtana Kunzweiler the Valedictorian. Shreyas Potnuru was unable to attend.

CABE Student Leadership Awards:

Mr. Melillo spoke about the CABE Student Leadership Awards, which are presented to two students from the middle school and two from the high school who exhibit exemplary leadership skills. From Newtown Middle School Maria Souza and Alexia Young and from Newtown High School Ella Featherstone and Miguel Gutierrez received this award.

Retiree Recognition:

Mr. Melillo introduced the retirees, which included Maryann Bisson, special education teacher at Newtown Middle School, Bonita Cartoun, third grade teacher at Head O'Meadow School, Karen King, sixth grade teacher at Reed Intermediate School, Dana Manning, Assistant Principal at Newtown High School, Kathleen Papp, special education teacher at Reed Intermediate School,

Nancy Scallon, reading teacher at Reed Intermediate School, Kathleen Swift, English teacher at Newtown High School, and Tim Tallcouch, chemistry teacher at Newtown High School.

Item 5 - Consent Agenda

MOTION: Mrs. Plante moved that the Board of Education approve the consent agenda which includes the correspondence report. Mr. Cruson seconded.

Mr. Ramsey thanked Mr. Cruson for compiling this report.

Motion passes unanimously.

Item 6 - Public Participation

Item 7 - Reports

There was no chair report.

Superintendent's Report: Mr. Melillo attended the Middle Gate Auuthor's Tea with first grade students. He is looking forward to the high school graduation on June 13 at 5:00 p.m. and the middle school moving-up ceremonies June 12 at 3:00 and 5:00 p.m.

Committee Reports:

Mr. Cruson said the Policy Committee met June 4 and continues with the employee policies and the administration of medicine policy. Two policies for a second read are on tonight's agenda.

Mrs. Plante reported that the DEI Committee met June 1 with presentations from Kellen Nixon and his colleagues and the Students Advocating for Diversity and Equity from the high school.

Mr. Ramsey visited the middle school art show in the library which was very impressive. Mr. Vouros was invited to be a book buddy with the middle school orange cluster which was a beautiful experience for parents and students.

Student Reports:

Mr. Godino reported that seniors have enjoyed the end of year festivities with a trip to Six Flags and a school carnival. Leo's Club had a dinner to recognize students for their dedication to volunteerism in the community. Sports continued to finish their seasons strong with both softball and girls lacrosse coming out on top for their SWC titles.

Ms. Kunzweiler said the annual awards ceremony was held. AP French and Spanish students ended the year with field trips and first year social studies students took part in an event in honor of Holocaust Remembrance Day. The students thanked the Board for welcoming them this year and were grateful for this opportunity.

Mr. Godino introduced Gabe Petertonjes and Isabel Khazadian who will be the new student representative next year.

Mr. Vouros gave the students a parting gift and thanked them for their reporting of high school events this year.

Item 8 – Presentations

Grade 7 and 8 Kitchen Science Curriculum:

Beth laciofano, who teaches this course, spoke about the curriculum.

Mr. Vouros thanked Mrs. Uberti and Mr. Ross for keeping that program alive.

DEI Update:

Mr. Melillo introduced Kellen Nixon and Jana Briggs who provided an update on their work.

Mr. Nixon said their mission is to provide innovative solutions to the community, non-profit organizations and Pre-K to 16 education sectors that promote a stronger sense of a diverse, human-centered culture and organizational purpose.

Ms. Briggs shared the work they have been doing since February. They created a 60-day needs assessment through meeting with diverse groups of people including Board members, students and staff to get an idea of how the Newtown Public Schools currently functions. After the culmination of their 60-day assessment, they developed four goals and objectives which is their DEI work plan to be spread over three years.

Mrs. Plant was looking forward to beginning this work with them.

Mr. Cruson appreciates them being here tonight and taking time to meet with the Board members.

Mr. Ramsey appreciated the discussion they had on classroom instruction and the responsive classroom. He asked if this presentation was at the schools also.

Mr. Nixon said they have not presented to the schools yet.

Mrs. Uberti said the first step is to share this with the administrators which we expect to do at the retreat this summer. There will also be planning at the school level.

Strategic Plan Update:

Mr. Melillo introduced Richard Lemons who we have been working with and this draft proposal was coming to the Board so they can provide feedback. Mr. Lemons reviewed the draft proposal of the strategic plan which included the process, the portrait of the Newtown graduate, core values of the community, diversity, equity and inclusion statement, strategic priorities and the continuous improvement process.

Mr. Ramsey asked if Mr. Melillo and Mrs. Uberti how they felt about the plan on a practical level to communicate with everyone.

Mr. Melillo said we were waiting for this information and are now creating a plan we will work around to be sure students get what they need. We will have a strategic plan in each school which will connect to the district plan. He likes the plan and we will bring students to a higher level with this plan. It will also connect with school level plans. Item 4 is around family engagement but we want families to have a voice. There was a bit of a disconnect since the pandemic. We have a Parent Advocacy Council which is in each school with parents coming together to meet with teachers and administrators.

Item 9 – Old Business

MOTION: Mrs. Plante moved that the Board of Education rescind Policy 4-301 Appointment and Duties of School Medical Advisor. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mrs. Plante moved that the Board of Education approve Policy 4215.1 Evaluation of School Nurses. Mr. Cruson seconded. Motion passes unanimously.

Item 10 – New Business

Newtown Federation of Educational Personnel Contract:

MOTION: Mrs. Plante moved that the Board of Education approve the ratified Newtown Federation of Educational Personnel Contract July 1, 2023 to June 30, 2026. Mr. Cruson seconded. Motion passes unanimously.

Custodians and Maintenance Association Contract:

MOTION: Mrs. Plante moved that the Board of Education approve the ratified Newtown Schools Custodians and Maintenance Association Contract July 1, 1023 to June 30, 2026. Mr. Ramsey seconded. Motion passes unanimously.

Healthy Food Certification:.

MOTION: Mrs. Plante moved that pursuant to C.G.S. Section 10-215f, the Board of Education or governing authority certifies that all food items offered for sale to students in the schools under its jurisdiction, and not exempted from the Connecticut Nutrition Standards published by the Connecticut State Department of Education, will comply with the Connecticut Nutrition Standards during the period of July 1, 2023, through June 30, 2024. This certification shall include all food offered for sale to students separately from reimbursable meals at all times and from all sources, including but not limited to school stores, vending machines, school cafeterias, culinary programs, and any fundraising activities on school premises sponsored by the school or non-school organizations and groups. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mrs. Plante moved that the Board of Education or governing authority will allow the sale to students of food items that do not meet the Connecticut Nutrition Standards and beverages not listed in Section 10-221q of the Connecticut General Statutes provided that the following conditions are met: 1) the sale is in connection with an event occurring after the end of the regular school day or on the weekend; 2) the sale is at the location of the event; and 3) the food and beverage items are not sold from a vending machine or school store. An "event" is an occurrence that involves more than just a regularly scheduled practice, meeting, or extracurricular activity. For example, soccer games, school plays, and interscholastic debates are events but soccer practices, play rehearsals, and debate team meetings are not. The "regular school day" is the period from midnight before to 30 minutes after the end of the official school day. "Location" means where the event is being held and must be the same place as the food and beverage sales. Mr. Cruson seconded. Motion passes unanimously.

Action on Minutes:

MOTION: Mrs. Plante moved that the Board of Education approve the minutes of May 16, 2023. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mrs. Plante moved that the Board of Education approve the minutes of May 23, 2023. Mr. Cruson seconded. Motion passes unanimously.

Item 11 – Public Participation

MOTION: Mrs. Plante moved that the Board of Education go into executive session for a discussion and possible action on non-union salary increases and a personnel request and invite Mr. Melillo and Mrs. Vadas. Mr. Cruson seconded. Motion passes unanimously.

Item 12 - Executive Session

The Board went into executive session at 8:30 p.m.

<u>Item 13 – Public Session for Action on Executive Session items.</u>

MOTION: Mrs. Plante moved that the Board of Education approve the salary adjustments for all non-union employees for 2023-2024 as per the Superintendent's recommendation. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mrs. Plante moved that the Board of Education, in accordance with the provisions of Section 10-151 of the Connecticut General Statutes, terminate the contract of employment of

Cheryl Stewart-McCaffrey effective June 30, 2023, as a result of the elimination of the position to which Ms. Stewart-McCaffrey was appointed, and the lack of any position to which Ms. Stewart-McCaffrey can be appointed, and moved further that the Superintendent of Schools is directed to advise Ms. Stewart-McCaffrey in writing of this action. Mr. Cruson seconded. Motion passes unanimously.

MOTION: Mr. Cruson moved to adjourn. Mr. Ramsey seconded. Motion passes unanimously.

Item 14 - Adjournment

The meeting adjourned at 9:33 p.m.

Respectfully submitted:

Donald Ramsey Secretary

Board of Education Newtown, Connecticut

Minutes of the special Board of Education meeting held on June 8, 2023, at 6:30 p.m. in the Board of Education conference room, 3 Primrose Street.

D. Zukowski, Chair

C. Melillo

- J. Vouros, Vice Chair
- D. Ramsey, Secretary
- D. Cruson
- A. Plante

Item 1 - Call to Order

Ms. Zukowski called the meeting to order at 6:30 p.m.

MOTION: Mrs. Plante moved that the Board of Education go into executive session regarding the evaluation of the Superintendent and invite Mr. Melillo. Mr. Cruson seconded. Motion passes unanimously.

Item 2 - Executive Session

The Board discussed the evaluation of the Superintendent.

MOTION: Mr. Vouros moved to adjourn. Mr. Ramsey seconded. Motion passes unanimously,

Item 4 – Adjournment

The meeting adjourned at 7:17 p.m.

Respectfully submitted:

Donald Ramsey Secretary