

Phase 1: Analysis	Purpose	Guiding Questions	Process	Desired Results	Participants
of current Carritor- lum/Plan Research best practices and study current practices	To reflect on critical questions To assess cristing program using data. To assess cristing program using data. Controlution to determine the control to determine the control to determine the control outcomes, assess- ments, and instruc- tional practices in the discipline To analyze the effectiveness of cur- riculum against the discipline To analyze our cur- riculum against the district thefus for curriculum design.	 What does the research tell us about teaching and learning within his discipline? How do our cernet: Endung Understanding (Eds.), Essential Questions mits of Learning, Jantencicical prescrites and current research? Where are our gaps and overlaps? Where are our gaps and overlaps? Where are our gaps and overlaps? How do us calcivented taka string about our curriculum and instructional prescrices? How do we foster student independence and engagement in the curriculum? Is the curriculum accessible to all students? What supports are needed for the student to access the curriculum and he successful? How doses our curriculum meet the 4.05/21at Canuty Stall? How dose our curriculum meet the 4.05/21at Canuty Stall? What instructional preformance ausements that will be used in each grade or course? How dose our curriculum and structure accurately reflect tuitedent matery of or progress towards standards? What instructional materials and practices are needed for the student to access the curriculum and be successful? How dose our curriculum meet the 4.05/21at Canuty Stall? What instructional materials and practices are needed for unreadent student? What instructional materials and practices are needed for curriculum and presenters that with the interformance ausements that with the interformance ausement that with the interformance ausement that with instructional materials and practices are needed for curriculum and presenters are needed for curriculum and presentime accurately preformance ausement that are accountely ref	Conduct a study of evidence-based besi practices of curriculum and optimic theolid ing state and miximal students of the sector of ing state and national students of the sector of current program. Compare and contrast the studies. Update and gather feed- back from Principals and other Stakeholders. Update and gather feed- back from Principals and other Stakeholders. Update and gather feed- back from Principals and other Stakeholders. Update and gather feedback regarding Tayles, Kgb, Learning Tar- gets, Assessments based on the findings Update and gather feedback regarding Tayles. Assessments are revised, instructional resources and pilot materials using the eatabilised criteria Plan and Create Road- map for Phase II.	Executive Summary containing: Bast practice review Contrant practice review Directions and beliefs Directions and beliefs Directions and beliefs model Contractional practices model Carriculan Task Force develops the Curriculan and revises the Executive Summary to include the revised work. Recommendation for: Core instructional resources Core instructional development plan Budget proposal Pracing guide provesal Pracing guide provesal Commendations for when Endering Understandings, Foldence activities for use, and assessments to measure student learning. Foldence of Differentiation, UDL Enrichment, and WIDA standards.	Per& 12 Carriculum Task Forces to be form in spring-summer prior to year 1:



Phase 1: Analysis • To reflect on critical • What does the research tell us of current Curricu- questions ing and learning within this di			Participants
 Jam JN B Reserch Jos assos cristing program using data. roti dentify evidences Asses current curriculum To identify evidences based best practices in the discipline To identify the current essential learning uto identify the current essential learning How dan our curriculum and the discipline To analyze the effectiveness of curriculum and regenerating the current in analyze the discipline To analyze our curriculum and the discipline To analyze our curriculum and in the curriculum and magnetis the current is the curriculum and magnetis the discipline To analyze our curriculum redef discipline To analyze our curriculum and magnetis the current discipline To analyze our curriculum and magnetis the curriculum and the curriculum and the curriculum and the curriculum and the curriculum and	plinef nder. practices of curriculum and instruction in the sesments discipline, includ- ing state and national science of the districts/schools districts/s	Pacing guide upon selection of core materials (identifies recommendations for when Enduring Understandings, Essential Questions, Learn-	Prek-12 Carricidum Taki Forcis to be form in gring-summer pric to year 1: • Elementary, Midd HS staff • Special Education Tule UFLL • Coordinator(s)/A ministrators • Technology Parent Advisory / University Partners

ASSEMBLED TEAM



CPS Cambridge Public Schools

 Teachers were recruited from across the district Representation includes teachers from OSS Library Media Educational Technology Elementary, middle and high school

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Activity	Purpose	Guiding Questions	Process	Desired Results	Participants
Phase 1- Analysis of current Current Jum/Pha Research best practices and study current practices	To reflect on critica questions rogarm using data. rogarm using data. Assess current curriculum To identify evidence- base best practices in the discipline To identify the current essential le ming outcomes, ass. ments, and instrut tional practices in the discipline To analyze the effectiveness of cur- riculum against district mhrefs for curriculum design.	about our curriculum and instructional practices? How can we close learning gaps and raise	 Conduct a study of reindence based heat practices of curriculum and instruction in the discipline, includ- ing state and national standards, benchmark districts/chools Conduct a study of the current program. Compare and contrast the studies. Update and gather feed- back from Principals and other Stakeholders- the studies. Update and gather feed- back from Principals and other Stakeholders- the studies. Update and gather feed- tigs. A seasure to based on the stakeholders- the studies. Update and gather feed- ting that and other Stakeholders. Update in a discription of conducting state of the rest of the state of the conduction of the conduction of the state	Executive Summary containing Best practice review Carrent practice review Directions and beliefs Innovation Configu- ration and any other instructional practices model Criteria for resource selection Roadmap for Phase 2 Curriculum Task Force develops the Curriculum and revies the Executive summary to include the revised work. Recommendation for: Core instructional revources Long term professional development plan Budget proposal Pacing guide upon selection of core instructional recources Long term professional development plan Budget proposal Pacing guide upon selection of core materials (identifies sesential Questions, Learn- ing Targits, and Assess- ments of Learning will be tungkitassesed, materials votimes, and assessments to measure di officienzing, b101 ef inficienzing, b101 eff inficienzing, b1	Peek-12 Carriculum Taak Forces to be forr in spring-summer pri to year 1: - Elementary, Mid HS staff - Special Educatio Tule U/ELL - Coordinator(s)/, ministrators - Technology Parent Advisory / University Partners



CPS

VISIONING

•Teachers unpacked the Curriculum Review Cycle rubric

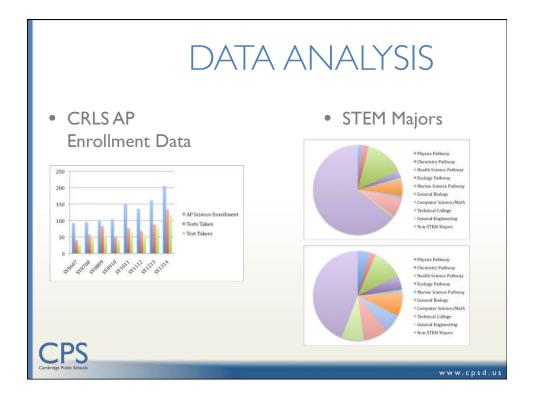
•Teachers approved a Science Department Vision Statement that will drive the work

•Teachers reviewed scholarly articles on Scientific Literacy and developed a CPS definition

•Teachers collaboratively documented the expectations for student work, instructional strategies, methods of assessment and curriculum coherence

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Activity	Purpose	Guiding Questions	Process	Desired Results	Participants
Phase 1: Analysis of current prices hest practices and study current practices	 To reflect on critical questions To assess cristing program using data. Assess current curriculum distinguistical curriculum distinguistical to the distinguistical distingent distinguistical distinguistical distingent distinguistic	 What does the research tell us about teach- ing and learning within this discipline? How do our current: Enduring Under- standing (USL), issential questions (EQ2). Learning Targets, and Assessments of Learning), instructional practices and resources align with the standards and control of the standards and a string about our curriculum and instructional practices? How can we close learning apps and raise proficiency? How can we close learning apps and raise proficiency? How do we foster student independence and engagement in the curriculum and students? What supports are needed for the student to access the curriculum and students? How dow curriculum redet Differen- tiation, and appropriate accommodations inclusive practices to meet the needs of all learners? How does our curriculum meet the 4 CS/2131 Century Stills? What sup leard common formative, sum- mative and performance assessments that will be used for curriculum and practices accurately reflect student matery of for progress towards standards? What is the professional development plan for implementing the intended curriculum? 	 Conduct a study of evidence-based best practices of curriculum and instruction in the discipline, includ- ing state and national standards, benchurst Conduct a study of the current program. Compare and contrast the studies. Compare and gather feed- back from Principals and other Statkholders- Update Teaching and Learning (TLT) Team. Make revisions to the TEB, RQB, Learning Tar- gets. Assessmentssated update Teaching and gather the EUs, RQB, Learning Targets, Assessments from the teaching starf. TLT, etc. Submit curriculum revi- sion recommendations. After the EUs, RQB, Learning Targets, and Assessments are revised. Identify protential mitraturnal resistored map for Phase II. 	Executive Summary containing: • Best practice review • Current practice review • Directions and beliefs • Innovation Configu- ration and and beliefs • Innovation Configu- ration and and beliefs • Context for resource selection • Criteria for resource selection • Roadmap for Phase 2 Curriculum Tak Force develops the Curriculum and revises the Executive Summary to include the resources • Long term professional development plan • Budget proposal Pacing guide upon selection of core materials idéntifies recommendations for when • Budget proposal Pacing guide upon selection of core materials idéntifies recommendations for when results of coremissing will be tunght/assessed, materials tudent learning. Fixdence of Differentiation, UDL Enrichment, and WIDA standards.	Prek-12 Curriculum Inak Forces to be form in spring-summer prior to year 1: • Ebenentary, Middl HS staf HS staf • Tele /H1 • Coordinator(s)/Ad ministrators) • Technology Parent Advisory / University Partners



CRLS	51.1%	48.9%	1741	CRLS	55.2%	5.1%	39.7%	1741
	Male	Female	SY1314 Enrollment		Paid	Reduced	Free	SY1314 Enrollment
Exercise Science	77.8%	22.2%	9	AP ES	84.2%	5.3%	10.5%	38
Science Research &	- concentration	Service Service		Astronomy	77.8%	11.1%	11.1%	9
Intern	77.8%	22.2%	9	AP Bio	86.5%	1.9%	11.5%	52
AP Physics B	73.9%	26.1%	23	Marine Biology			1	
AP Physics C E&M	70.6%	29.4%	17	Internship	87.5%	0.0%	12.5%	8
AP Physics C Mechanics	69.4%	30.6%	36	AP Chem	82.1%	5.1%	12.8%	39
Marine Biology	56.4%	43.6%	39	Organic Chemistry	76.9%	7.7%	15.4%	13
Astronomy	55.6%	44.4%	9	AP Physics C Mechanics	80.6%	2.8%	16.7%	36
AP Chem	53.8%	46.2%	39	Epidemiology	75.0%	6.3%	18.8%	16
Epidemiology	50.0%	50.0%	16	Zoology	78.9%	0.0%	21.1%	19
AP Bio	48.1%	51.9%	52	Science Research &			1.	22
Zoology	47.4%	52.6%	19	Intern	77.8%	0.0%	22.2%	9
Organic Chemistry	38.5%	61.5%	13	AP Physics C E&M	70.6%	5.9%	23.5%	17
AP ES	36.8%	63.2%	38	Oceanography	75.0%	0.0%	25.0%	8
Marine Biology				Marine Biology	64.1%	10.3%	25.6%	39
Internship	25.0%	75.0%	8	AP Physics B	73.9%	0.0%	26.1%	23
Anatomy & Physiology	22.0%	78.0%	41	Exercise Science	55.6%	0.0%	44.4%	9
Genetics	20.0%	80.0%	20	Genetics	55.0%	0.0%	45.0%	20
Oceanography	12.5%	87.5%	8	Anatomy & Physiology	46.3%	15.8%	46.3%	41
	10% or mo	ore under-re	presented		10% or m	ore under-rep	presented	-
	10% or mo	ore over-rep	resented			ore over-repr		

Activity	Purpose	Guiding Questions	Process	Desired Results	Participants
Phase 1: Analysis of current virtue hum/Phan Recearch best practices and study current practices	To reflect on critical guestions program using data. Assess current curriculum and based beit practice in the discipline To identify evidence based beit practice in the discipline To identify the current essential learning outcomes, assess ments, and instruc- tional practices in the discipline effectiveness of cur- rent practices in the discipline To analyze our cur- riculum against the district rubric for curriculum design.	 What does the research tell us about teaching and learning within this discipline? How do our current: Enduring Understanding (FUG). Issentid Questions (EQ0). Learning Targets, and Assessme it, et al. (EQ). The sense of the sense sense the sense of the sense of the sense of the sense of the	 Conduct a study of evidence-based best practices of curriculum and instruction in the discipline, includ- ing state and national study. Schools Conduct a study of the current program. Compare and contrast the studies. Update and gallent ford- based based based based based and other Statkholders- ultate transformed based based on the findings. Update Tacching and Learning (TLT) Team. Make revisions to the EUS, ROL, Learning Targets, Assessments based on the findings. Update and galler feedback regrating EUS, ROS, Learning Targets, Assessments from the teaching start. TLT: etc. Stabint Carriculaum redu- asion the EUS, ROS, Learning Targets, Jearning Targets, and Assessments are revised. Jearning Targets, and Assessments are revised. Jearning Targets, and Assessments are revised. Jearning Targets, and Assessments are revised. 	Executive Summary containing: Best practice review Carrent practice review Directions and beliefs Innovation Configu- ration and any other instructional practices model Corteria for resource selection Conductory of these 2 Curriculum Table Force develops the Carricolum and revies the Executive Summary to include the revised work. Recommendation for: Long term professional development plan Budget proposal Pacing guide upon selection for corn material (identifies recommendations for when reductions Learning will be tanget and Assess- ments of Learning will be measures subset learning. Evidence Otherferentiation. UDL Enrichment, and WIDA subsets.	Prek-12 Curriculum Task Forces to be form in apring-summer prior to year 1: • Elementary, Midd His staff • Special Education Title VELL • Coordinato(s)/Ar ministrators • Technology Parent Advisory / University Partners

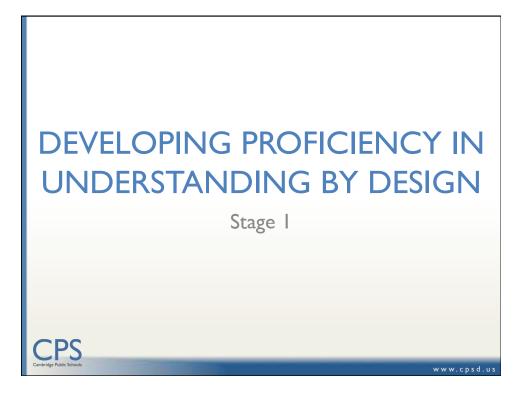
• Structure of new standards

Current MA Framework		Next Generation Science Standards			
Grade / Domain	Standard	Grade / Domain	Standard		
K-2 / Physical Science	Sort objects by observable properties such as size, shape, color, weight, and lexture.	1st Grade / Physical Science	Use tools and materials to design and build a device that uses light or owned to solve the problem of communicating over a distance. ⁴ [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of sum beats? Assessment Boundary. Assessment does not include Inchnological details for how communication devices work.]		

•Evaluation of alignment of current elementary content

2 2-ESS2-2. 2-LS2-3(MA). 2-PS1-2. 2 2-ESS2-3. 2-LS4-1. 2-PS1-3. 2-ESS2- 4(MA). 2-PS1-4. 2-PS1-4.		E.1.	0 5000 /	L.4.	1	. P.1.2	Part in K	K-2-ETS1-3.
2 2-ESS2-3. 2-LS4-1. 2-PS1-3. 2-ESS2- 4(MA). 2-PS1-4. 2-PS1-4. 2-PS3-1(MA).			2-ESS2-1.	L.2.3	ĸ		2-PS1-1.	
2-ESS2- 4(MA). 2-PS1-4. 2-PS3-1(MA).			2-ESS2-2.		2-LS2-3(MA).		2-PS1-2.	
4(MA). 2-PS1-4. 2-PS3-1(MA).	2		2-ESS2-3.		2-LS4-1.		2-PS1-3.	
2-PS3-1(MA).			2-ESS2-					
2-PS3-1(MA).			4(MA).				2-PS1-4.	
							2-PS3-1(MA).	
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Activity	tivity Purpose	Guiding Questions	Process	Desired Results	Participants
Phase 1: Analysis of correct Carriac- ium/Plan Recarric hist practices and study current practices	urrent Curricu- /Plan Research practices study current • Assess current	 What does the research tell us shout teaching and hearing within this discipline? How do our current: Enduring Understanding (EDG). Essential Questions (EQO). Learning Targets, and Assessments for Querning, instructional practices and resources align with the standards, and urrent research? What is our apps and overlaps? How do we foster student independence and resource that a syning about our curriculum and instructional practices? How do we foster student independence and response in the currical integration of the students? How do we foster student independence and response in the currical integration of the students? How do we foster student independence and engegement in the currical integration of the students? What is our curriculum reflect Differentiation, and appropriate accounced and any students? How does our curriculum methe teact of all learners? How does our curriculum methe teact of the research? What are needed for the students? What are needed for the student of the research? How does our curriculum methe teact of all learners? How does our curriculum methe teact of the research? What are the common formative, at mative and performance assessments to will be used in each grade or course? How does our curriculum implementation? What is the professional development plan for implementing the intended curriculum? 	 Conduct a study of evidence based best evidence based best evidence based best evidence based best discipline, includ- ing state and national standards, benchmark districit/schools Conduct a study of the current program. Compare and contrast the studies. Update and gather feed- based from Principals and other Stakeholdern- Update Teaching and the Stakeholdern- the State State State State (State State State State State State State State State State State State State State (State State State State State State State State State State State State State (State State State State State State State State State State State State (State State State State State State State State State State State State State State State State (State St	Executive Summary containing Best practice review Current practice review Directions and beliefs Innovation Configu- ration and any other instructional practices model Conteria for resource selection Roadmap for Phase 2 Curriculum Task Force Contentiation for Phase 2 Curriculum Task Force Contentiation for Phase 2 Curriculum Task Force Contentiation for: Content of the selection and many to be Electional revised work. Recommendation for: Long term professional development plan Budget troposal Pacing guide upon selection f core materials (identifies resources Long term professional development plan resources long term professional development plan f core materials (identifies or activities for use, and assesments to mesaure student learning, Evidence or differentiation, UDL, Enrichment, and WIDA standards.	Peek-13 Carrischum Taak Forces to be form in spring-summer prior to year 1: • Elementary, Midd HS staff • Special Education Title I/ELL • Coordinatos(s)/A ministrators • Technology Parent Advisory / University Partners

ESSENTIAL QUESTIONS • Developing, using and modifying JrK-12 Essential Questions organized by DCI (Disciplinary Core Idea) District Wide Lower Elementary Upper Elementary Middle School How does where you How does where you Why is balance How have human live matter? live matter? within an ecosystem activities impacted essential for its the balance of the sustainability? ecosystem in which we live? CPS www.cpsd.us

TRANSFER GOALS

• State the long-term accomplishments that students should be able to <u>do</u> with their knowledge

Transfer goals should be thought of in the 40-40-40 rule
What should students be able to do in 40 days? 40 weeks? And 40 years?

• The CRIP team is working to craft JrK-12 transfer goals that address the "40 years." Individual curriculum design teams will develop transfer goals that address the 40 days and 40 weeks



NEXT STEEPS improve the state of the state o										
Science 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 Menitor Phate 1: Analysis/Plan Develop Implement Year 1 Implement Year 2/ Monitor Implement Year 3/ Monitor Evaluate •Summer of 2014: Teacher teams working to develop Stage 1 and Stage 2 of units of study at grades 1, 4, 6 and 9 •Fall of 2014: Teacher teams develop Stage 3 in preparation for budget season •Cycle begins again for grades 2, 5, 7 and 10 in 2015-2016 and JrK/K, 3, 8, 11 and 12 in 2016-2017 COSS					_					
Science 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 Menitor Phate 1: Analysis/Plan Develop Implement Year 1 Implement Year 2/ Monitor Implement Year 3/ Monitor Evaluate •Summer of 2014: Teacher teams working to develop Stage 1 and Stage 2 of units of study at grades 1, 4, 6 and 9 •Fall of 2014: Teacher teams develop Stage 3 in preparation for budget season •Cycle begins again for grades 2, 5, 7 and 10 in 2015-2016 and JrK/K, 3, 8, 11 and 12 in 2016-2017 COSS		NEXT STEPS								
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Analysis/Plan Monitor Monitor		2013/14	2014/15	2015/16	2016/17	2017/18	2018/19			
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