Curriculum Development & Planning

Irvington UFSD Strategic Objectives

1. Provide students with a rigorous, comprehensive, enriched and diversified curricula that will prepare students to achieve their personal best, and will integrate technology in their learning.
2. Support educators through targeted professional learning and opportunities for collaboration.
3. Encourage innovation, creativity and risk-taking to inspire a dynamic learning environment.
4. Foster the creation of a culture where students are active participants in society.

Theories of Action and Goals

Theory

If we provide students with rigorous authentic, learning experiences rooted in a comprehensive curriculum, then they will acquire the knowledge, skills and dispositions of successful 21st century learners that will prepare them to thrive in a rapidly evolving global society.

Goal

In order to develop successful 21st century learners that will be prepared to thrive in a rapidly evolving global society, the Irvington School District will:

- provide students with rigorous authentic, learning experiences
- develop a comprehensive curriculum that includes:

  - aligned and articulated content
  - defined learning outcomes
  - a balanced and systematic approach to assessment
  - 21st Century skills and dispositions- problem solver, flexible thinker, collaborative learner, effective communicator, empathetic citizen, self-reliant, reflective, creative, risk-taker.

Curriculum
(Stage 1)

Curriculum refers to the knowledge, skill and thinking we expect students to learn and develop in courses/classes and over time. The curriculum is a reflection of standards and learning goals that students are expected to meet, and includes units and lessons teachers are expected to teach and assignments students are expected to complete. The curriculum includes: books, resources, videos, presentations, student materials developed by teachers, projects, test, and other assessments designed to evaluate student learning.

Curriculum Developed/Reviewed

The once common practice of a regular cycle of curriculum review has become more challenging over these past several years with the changes and increased expectations of standards. In addition to the revision of the Common Core Learning Standards (now called the New York State Next Generation ELA and Math Standards), which have implications across all curriculum areas, New York State has adopted the new Social Studies Framework, and the New York State Science Learning Standards (NYSSLS), based on the Next Generation Science Standards.

The thorough process of curriculum review requires an assessment of a K-12 program, but the viability of elementary teachers who teach all core subjects reviewing multiple curriculum areas simultaneously is unrealistic.

Instruction
(Stage 3)

A well-developed and articulated curriculum creates the foundation for consistent expectations for teaching and learning. Effective implementation of curriculum requires best teaching practices steeped in a deep understanding of content and a strong knowledge of students. Through a complex repertoire of skills, teachers differentiate content, process and product to support the achievement of all learners as they strive to meet the clearly defined instructional goals, reflected in high expectations and success for all students.

Assessment
(Stage 2)

In order to determine the effectiveness of the articulated curriculum, as well as teaching practices, a comprehensive and diverse range of assessments must be applied on a regular basis. Our approach to assessment includes pre-assessment, formative assessment and summative assessment.

Through the curriculum review process, data collection, performance-based assessment and ongoing revision of practices and expectations informs the decision-making process necessary to maintain high-levels of learning that reflect current and future needs of our students.

Instructional Design Practices

- A well-developed unit of study considers the alignment of each unit component using assessment as the guiding principle in the cyclical process of instructional design.
- It is the decision of each teacher to select and apply the best instructional practices for the classroom based on the needs of the learners.
- In addition to the Danielson Framework for Teaching, our guiding document for expectations in our classrooms, we have also articulated a set of dispositions that we believe all graduating seniors should reflect as learners.
- In addition, the expectations for technology use have increased, and will be further articulated through the technology plan.

2018-2019 Areas of Focus

- Pilot a plan for regularly scheduled release time for all teachers K-12
- Continued development of a system and structure that supports in-house PD provided by both internal and external “experts”
- Continued focus for faculty meetings on unit design and instructional practices
- Continued expectation of the knowledge and application of the Four Learning Goals: Knowledge, Skill, Making-Meaning and Transfer
- Continue to support teachers in use of Google applications through Google PD Team
- Increased knowledge of the RTI model to support Tier 1 interventions in classrooms
- Increased access to technology to support the integration of technology into teaching and learning
- Increased expectation of common assessments across grade levels and courses
- Increased use of data analysis to inform instruction
- Increased use of standardized test data to guide program and instruction through item analysis

Elementary

Elementary

- Curriculum
  - Math
  - ELA
  - Science
  - Social Studies
  - Special Area
- Instruction
  - Focus on ELA Practices
  - Workshop Model
  - Learning Stations
- Assessment
  - Fountas & Pinnell
  - Unit Assessments

New York State P-12 Science Learning Standards

2. Interdependent Relationships in Ecosystems

Students who demonstrate understanding can:

2-LS2-1. **Plan and conduct an investigation to determine if plants need sunlight and water to grow.** [Assessment Boundary: Assessment is limited to testing one variable at a time.]

2-LS2-2. **Develop a simple model that illustrates how plants and animals depend on each other for survival.*** [Clarification Statement: Examples could include animals dispersing seeds or pollinating plants, and plants providing food, shelter, and other materials for animals.]

2-LS4-1. **Make observations of plants and animals to compare the diversity of life in different habitats.** [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices

Developing and Using Models

Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

- Develop a simple model based on evidence to represent a proposed object or tool. (2-LS2-2)

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-LS2-1)
- Make observations (firsthand or from media) to collect data that can be used to make comparisons. (2-LS4-1)

Connections to Nature of Science

Scientific Knowledge is Based on Empirical Evidence

- Scientists look for patterns and order when making observations about the world. (2-LS4-1)

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems

- Animals depend on plants or other animals for food. (2-LS2-2)
- (NYSED) Plants depend on water, light and air to grow. (2-LS2-1)
- (NYSED) Some plants depend on animals for pollination and for dispersal of seeds from one location to another. (2-LS2-2)

LS4.D: Biodiversity and Humans

- There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)

ETS1.B: Developing Possible Solutions

- (NYSED) Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas to other people *(secondary to 2-LS2-2)*

Crosscutting Concepts

Cause and Effect

- Events have causes that generate observable patterns. (2-LS2-1)

Structure and Function

- The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)

Patterns

- Similarities and differences in patterns can be used to sort and classify organisms. (2-LS4-1)

Connections to other DCIs in second grade: N/A

Articulation of DCIs across grade-levels: **K.LS1.C** (2-LS2-1); **K-ESS3.A** (2-LS2-1); **K.ETS1.A** (2-LS2-2); **3.LS4.C** (2-LS4-1); **3.LS4.D** (2-LS4-1); **5.LS1.C** (2-LS2-1); **5.LS2.A** (2-LS2-2),(2-LS4-1)

Common Core State Standards Connections:

ELA/Literacy –

W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-LS2-1),(2-LS4-1)

W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1),(2-LS4-1)

SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. *(2-LS2-2)*

Mathematics –

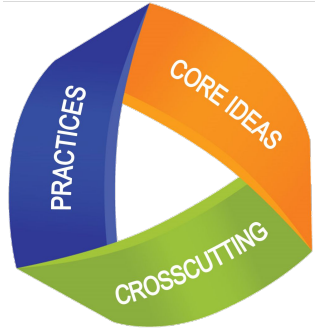
MP.2 Reason abstractly and quantitatively. *(2-LS2-1),(2-LS4-1)*

MP.4 Model with mathematics. *(2-LS2-1),(2-LS2-2),(2-LS4-1)*

MP.5 Use appropriate tools strategically. *(2-LS2-1)*

2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems. *(2-LS2-2),(2-LS4-1)*

Earth Science & Space Sciences
Life Science
Physical Science
Engineering Practices



Amplify

Introduction of Earth Science at each Grade Level

- Kindergarten Sunlight & Weather
- Grade 1 Spinning Earth
- Grade 2 Changing Landforms
- Grade 3 Weather and Climate
- Grade 4 Processes that Change the Earth
- Grade 5 Patterns of Earth and Sky

Elementary
Amplify Program Assessment

Action Plan
Program: Amplify Science Units of Study Grades K-5
Goal: To provide high-quality science instruction that meets the NYSSLS.

Year	Approach	Implementation	Results
2018-2019	● Select NYSSLS aligned program for Grades K-5	● Introduce and pilot Amplify earth science units of study grades K-5 ● Purchase Amplify units/materials ● Train classroom teachers in use of Amplify ● Reconvene Committee to discuss next steps	Feedback from teachers Feedback from students where appropriate Student assessment data
2019-2020	● Assess the current curriculum, including PLTW to ensure alignment with NYSSLS ● Define curriculum needs for each grade level ● Select a phase-in process to ensure all standards are being met ● Train teachers in additional units		

PLTW

Kindergarten

- Exploring Design & Animals and Algorithms

Grade 1

- Light and Sound & Animated Storytelling

Grade 2

- Properties of Matter & Grids and Game

Grade 3

- Stability and Motion: Forces and Interactions & Programming Patterns

Grade 4

- Energy: Collisions & Input/Output: Computer Systems

Grade 5

- Infection: Modeling and Simulation & Robotics and Automation

Elementary
PLTW Program Assessment

Action Plan
Program: K-2 Project Lead the Way
Goal: To create the foundational knowledge, skills and thinking of STEM to support individual growth and interest of students

Year	Approach	Implementation	Results
2018-2019	• Increase teaching staff 1.0 • Provide required training of PLTW Launch • Align the K-2 Launch units with the NYSSLS	• Provide STEM based instruction to students in grades K-2 on a weekly basis with classroom teacher participation • Provide 2 units of study at each grade level- (1) Engineering and (1) Computer Science • Engage all STEM teachers in department-wide meetings and dialogue to begin an articulation process of STEM based instruction	• PLTW Launch Student Assessments • Feedback from classroom teachers • Feedback from PLTW teacher
2019-2020	• Assess the implementation of the K-2 Program for value and timing • Adjust units of study and schedule to address assessment	• Begin to identify necessary shifts in implementation of PLTW based on articulation of knowledge and skills by grade • Implement PLTW at a higher level based on experience of students and the K-2 teacher	• PLTW Launch Student Assessments compared to prior year and cohort

English Language Arts

- Use of Common Assessment - Fountas and Pinnell
- Renewed Commitment to Workshop Model
- Alignment of curriculum based on data analysis of NY State Assessments
- Redesign of assessments

Mathematics

- Continued support of K-5 Math Modules
  - Summer workshops designed to address teaching strategies
  - Continued coaching for classroom strategies and practices to support implementation of Next Generation Math Standards
  - One on one support for all new teachers and teachers changing grades
  - Continued data analysis to measure the fidelity of the modules in reaching the defined expectations for students and the alignment for students on the state assessments
  - Continue data analysis to assess student growth

Secondary

Secondary

- Curriculum, Instruction & Assessment
  - Math
  - ELA
  - Science
  - Social Studies
  - All Special Areas

Social Studies
June 2019 Assessment
Global History and Geography II

As teachers and districts consider curriculum and instructional decisions in light of the NYS K–12 Social Studies Framework, there are three instructional shifts to highlight. The purpose of the Framework in general, and the shifts, in particular, is to affirm what teachers are already doing well and to accelerate the types of changes in teaching and learning that can help students.

The design of the NYS K–12 Social Studies Framework directly supports practitioners in making this shift toward greater conceptual understanding.

The three instructional shifts are:

Shift #1: Focus on Conceptual Understanding

Shift #2: Foster Student Inquiry, Collaboration, and Informed Action

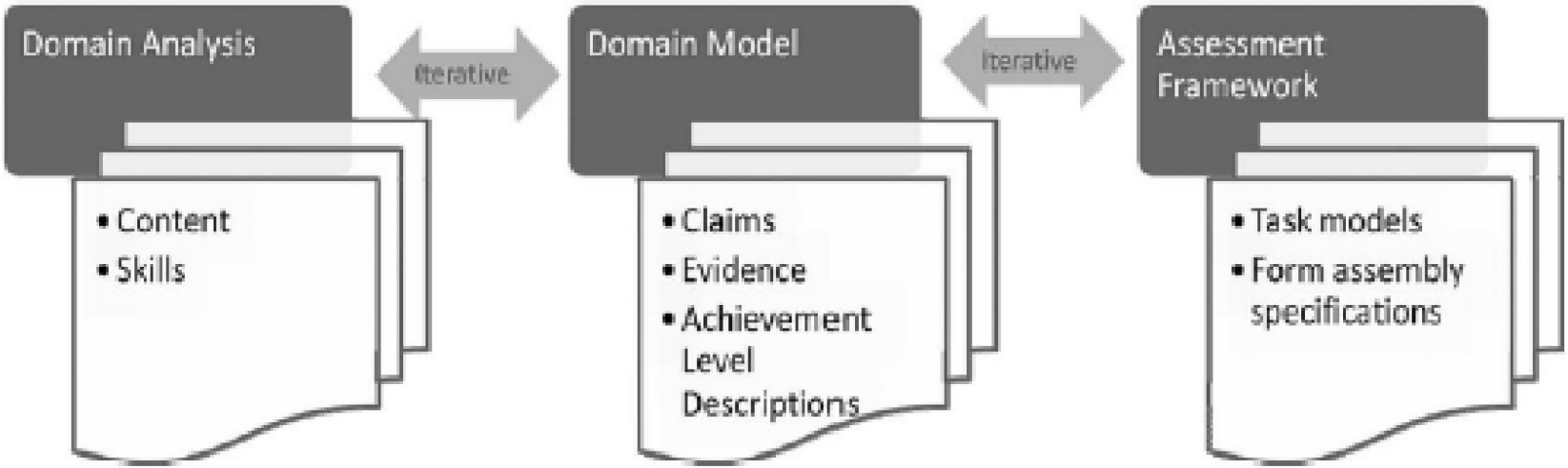
Shift #3: Integrate Content and Skills Purposefully Instruction in Social Studies, aligned to the NYS K–12 Social Studies

Social Studies
June 2019
Global History and Geography II

Framework, can and should take many forms—there is no one single approach that will meet the needs of all students. Teachers, as professionals, should develop a repertoire of instructional methods and strategies.

Different methods should be used depending on what content, skills, and relevant connections are being taught and the outcomes one wants students to demonstrate. Neither inquiry nor lecture can be the sole method used to teach. There are many different active learning strategies that teachers can employ effectively depending on the topics chosen, skills required, and learning objectives. Active learning strategies include research and oral reports, debates, simulations, project-based learning, and cooperative learning.

Evidence Centered Assessment Design



NYSSLS Assessment Implementation Timeline

2022	5th and 8th grades
2023	Life Science- Biology and Earth and Space Science
2024	Physical Science – Chemistry and Physical Science – Physics

Amplify Middle School

- Grade 6 = Populations and Resources
- Grade 7 = Traits and Reproductions
- Grade 8 = Plate Motion Engineering (ES)

Amplify Program Assessment Middle School

Action Plan
Program: Integration of a 1:1 Content Based Curriculum
Goal: To implement instruction that is engaging, transformative, data-rich, and inquiry/evidence-based through the use of 1:1 device/student ratio.

Year	Approach	Implementation	Results
2018-2019	• Introduce and pilot Amplify units of science • Purchase devices to support 1:1 in classrooms implementing Amplify Science units • Purchase Amplify units/materials • Train Science teachers in use of Amplify	• **Engaging** - Teachers will use a NYSSLS aligned curriculum and approach (3D instructional design), through a 1:1 model. • **Transformative** - Learning activities will require the use of technology for successful implementation • **Data-rich** - Teachers will use online assessment tools to collect data to measure student knowledge, skill and thinking • **Inquiry and Evidence Based** - Instruction will be designed to promote the exploration of phenomena with the purpose of solving authentic problems. Students will develop written scientific explanations and arguments	• Data collection of student perceptions of learning science through a 1:1 model • Computer-based learning experiences that redefine traditional, paper-based tasks • Assessment data that provide evidence of student learning • Student-produced work that reflects the use of scientific evidence to develop argument and explanation

Middle School
PLTW Program Assessment

Gateway

- ## Green Architecture

  Today's students have grown up in an age of "green" choices. In this unit, students learn how to apply this concept to the fields of architecture and construction by exploring dimensioning, measuring, and architectural sustainability as they design affordable housing units using Autodesk's® 3D architectural design software.

- ## Computer Science for Innovators and Makers

  This unit will allow students to discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects. Throughout the unit, students will learn about programming for the physical world by blending hardware design and software development. They will design and develop a physical computing device, interactive art installation, or wearable, and plan and develop code for microcontrollers that bring their physical designs to life.

- ## Energy and the Environment

  Students are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. They design and model alternative energy sources and evaluate options for reducing energy consumption.

Action Plan
Program: PLTW Specialization Courses
Goal: To expand STEM based opportunities for middle level students.

Year	Approach	Implementation	Results

2018-2019	• Increase learning opportunities for students
	• Provide alternate options to study hall for students in 8th grade.
		• Offer 3 electives to 8th grade students
		  ○ Green Architecture
		  ○ Energy & The Environment
		  ○ Computer Science for Innovators & Makers
		• Provide PLTW training for new courses
			• Number of students taking advantage of 1 course
			• Number of students taking advantage of 2 courses
			• Feedback from students
			• Feedback from teachers teaching the courses

2019-2020	• Provide the same 3 electives	• Promote electives to 7th grade students • Analyze enrollment data - are students taking accelerated courses and cannot fit the electives are there other electives worth considering?	• Collect enrollment numbers for year 2
2020-2021	• Gather the enrollment of students in the HS opting into STEM based courses	• Collect feedback from HS students related to the influence the 8th grade electives had in making decisions for HS courses	• Based on feedback consider adjustment of offerings • Collect data on student success in STEM based HS courses

English Language Arts

- Development of mission and beliefs for graduating seniors
- Consideration of selectives and electives
- 9th Grade Writing Seminar review and articulation
- Increased alignment of curriculum and assessments
- Expansion of Bard Practices

Areas of Expansion

- Expand opportunities for STEM/Computer Science based courses
  - Expand PLTW at the Middle School through the implementation of new modules
  - Ensure that computer science sequences and opportunities are reviewed and aligned to support all students
- Development of RTI Model
  - Introduction of Tiers of RTI
  - Development of systems and processes that support an RTI model
  - Development of data teams to ensure data use for instructional decisions and placement of students

Content Area Professional Development that Support our Areas of Focus

- English Language Arts
  - K-5 ELA Instructional Coach
  - 6-12 Secondary Instructional Coach
  - English Department Chair
  - Bard Writing
- Mathematics
  - K-5 Math Instructional Coach
  - Metamorphosis
- Counseling
  - Counseling Chair
  - Counseling Consultant
- Science
  - K-5 Math Instructional Coach
  - 6-12 Secondary Instructional Coach
  - Science Department Chair
  - Science Consultant
- Social Studies
  - 6-12 Secondary Instructional Coach
  - Social Studies Department Chair
  - Social Studies Consultant
- World Language
  - WL Department Chair
  - WL Consultant

2019-2020

- Increased use of performance-based assessment
- Development of process at all levels for looking at student work for the purposes of data collection, benchmarking and further articulation of teaching practices as they relate to student success
- Continued development of common assessments
- Expansion of use of common rubrics, self-assessment, peer assessment
- Increased use of interim assessment as a tool for adjustment in daily practice
- Use of assessment to differentiate instruction
- Implementation of K-12 Counseling Program
- Introduction of capstone projects at elementary, middle and high school

District Professional Development that Support our Areas of Focus

- Workshop on Teaching Thinking
- Learning Sessions that include data review and analysis
- Learning Sessions on the alignment of unit planners using the four learning goals
- Using data to analyze benchmark assessments and inform decision-making
- Developing knowledge and skill in the implementation of the reading assessments
- Looking at student work to inform thinking and practice
- Expansion of Google Classroom and other tools

Considerations for the BOE

- To what extent does the shift in approach and implementation of materials, including textbooks, shift BOE policy and expectations?
- To what extent does degree of detail related to curriculum and instruction inform the BOE decision making processes?