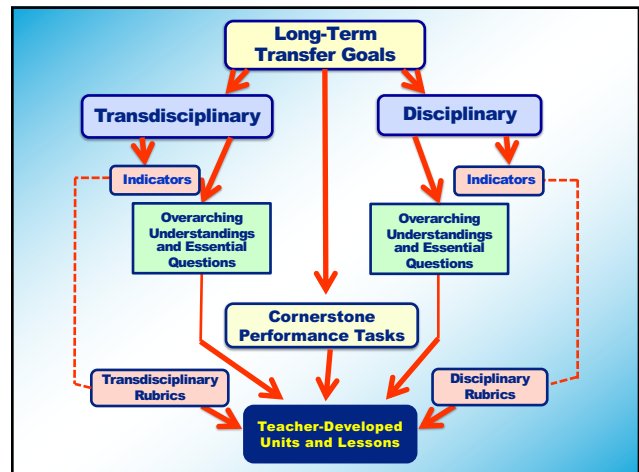
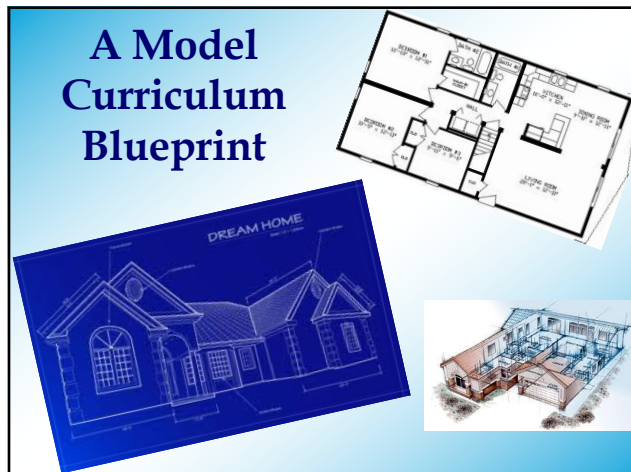


Research Finding...

A “**guaranteed** and **viable** curriculum is the #1 school-level factor impacting student achievement.”

-- Marzano, *What Works in Schools*



Long-Term Transfer Goal

"Students will be able to independently use their learning to ..."



An effective curriculum equips learners for autonomous performance ... by design!

Transfer Goal: Writing

Students will be able to independently use their learning to:

- **Effectively write in various genres for various audiences and purposes (inform, explain, entertain, persuade, guide, or challenge/change things).**

Transfer Goals: Mathematics

- **Make sense of never-before-seen, “messy” problems and persevere in trying to solve them.**
- **Construct viable arguments and critique the reasoning of others.**

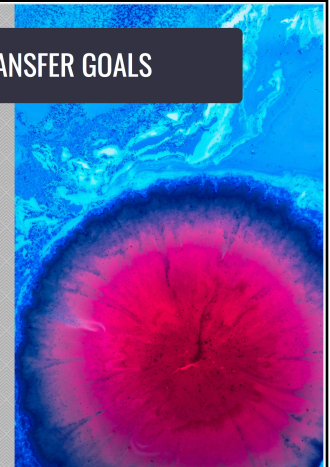
CFSD SCIENCE TRANSFER GOALS


Students will be able to independently use their learning to...

Make informed judgments and decisions with a balance of curiosity, skepticism, and social perspective.

Communicate scientific ideas, arguments, and/or results for a variety of purposes and audiences.

Make sense of problems or phenomena and construct solutions through disciplined trial and error.







Humble POG are Long-Term Transfer Goals!



- *Communicator*
- *Global Citizen*
- *Critical Thinker*
- *Creative Innovator*
- *Leader & Collaborator*
- *Personally Responsible*

T-Chart Process



<i>What would we see in a critical thinker...</i>	<i>A non-critical thinker...</i>
•	•
•	•
•	•
•	•
•	•
•	•
•	•

Indicators of a Critical Thinker	Indicators of a non-Critical Thinker
<ul style="list-style-type: none"> Asks critical questions Remains "skeptical" Questions the accuracy, validity, reliability of information Deliberately seeks different points of view and considers their merits Able to identify personal and cultural biases Self assesses/monitors progress and adjusts as needed Reflects on experience Deliberative Views problems on a "macro" and "micro" level Recognizes "shades of grey" Can provide a rationale/support for their position/answer Uses evidence to prove/disprove Thrives with questions Comfortable w/ ambiguity Can transfer learning to new situations 	<ul style="list-style-type: none"> Does not question Gullible Accepts things at face value Does not seek other perspectives Narrow – only sees one perspective Egocentric Fails to self monitor Doesn't revise or value revision Needs others to tell them how they're doing Impulsive Seeing things in isolation Sees things as "black or white" Can't support their position/answer Does not provide evidence or doesn't know what evidence to use Only wants "the" answer Uncomfortable with ambiguity Can only apply what was taught in the way it was taught

A coherent curriculum spirals around a set of "big ideas" and recurring essential questions.

Mathematical Modeling

"Big Idea" Understandings

- Mathematicians create models to interpret and predict the behavior of real-world phenomena.**
- Mathematical models have limits and sometimes they distort or misrepresent.**

Mathematical Modeling

Essential Questions

- How can we best model this (real-world phenomena)?***
- What are the limits of this model?***
- How reliable are its predictions?***

Argumentation



"Big Idea" Understandings

- A convincing argument requires a clear position, logical reasoning and support with evidence.
- An effective argument contains rebuttals to possible objections.

Argumentation



Essential Questions

- *What makes an argument persuasive?*
- *What are possible objections to my argument? How might these be countered?*



Next Generation Science Standards

- 6. Structure and Function.** The way in which an object or living thing is shaped and its substructure determine many of its properties and functions.

*How are structure and function related:
... in living things?
... in nonliving things?*



Next Generation Science Standards

Includes eight *Practices* for K-12 Classrooms.
Example:

7. Engaging in argument from evidence

*What makes a credible argument?
What constitutes effective evidence?*

Physical Education/Health

International School of Beijing
Learns through
Understanding by Design

Understanding by Design is an approach to teaching and learning that puts the emphasis on acquiring "Essential Understanding," often guided by inquiry through "Essential Questions." "Enduring Understanding" are the important, deep and central "big ideas" of learning that stand behind all that we do. "Essential Questions" are probing, open-ended and thought-provoking questions that spark students and teachers to look beyond the basic content of an area of study.

At ISB, groups of teachers representing all subject areas and all grades worked together to create "over-arching essential questions". These questions represent the core of what is really important in an area of study. They also represent agreements as to the recurring characteristics of learning in a subject area that will be reinforced in different ways and at different times to help build a rich Web of understandings for our students.


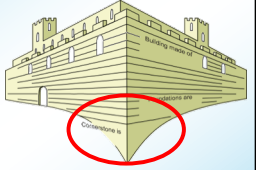
Physical Education/Health Essential Questions:

1. How do I perform at my best?
2. Why is it important to improve?
3. How can I use space?
4. How can I influence the outcome of a game/activity?
5. Why do we have rules?
6. How can physical activity influence health?
7. Why lead a healthy lifestyle?
8. What makes a good team player?
9. How can decisions impact my well-being?
10. Why is active participation beneficial?


体育

corner·stone (n):

1. the first stone laid at a corner where two walls begin and form the first part of a new building
2. something that is fundamentally important to something



Cornerstone Tasks



- Anchor the curriculum in important, recurring tasks.
- Require understanding and transfer of learning.
- Integrate 21st century outcomes.
- Provide evidence of authentic accomplishments.

("Doing the subject" and "playing the game")

Transfer Goal: Writing

Students will be able to independently use their learning to:

- Effectively write in various genres for various audiences and purposes (inform, explain, entertain, persuade, guide, or challenge/change things).

A Macro Curriculum and Assessment System for 21st Century Learning

Cornerstone Assessments in Writing (6-12)

GREECE CENTRAL SCHOOL DISTRICT, NY

GRADE	Expository	Persuasive	Literary Analysis	Creative/ Expressive
Grade 6	Research report	Position paper	Literary essay on setting or conflict	Original myth
Grade 7	Autobiography	Policy evaluation	Literary essay on character	Persona writing
Grade 8	Research report	Problem/solution essay	Literary essay on symbolism	Narrative fiction
Grade 9	Cause/effect essay	Editorial	Analysis of multiple literary elements	Poetry
Grade 10	Research report	Social issue essay	Critical Lens essay	Historical Persona
Grade 11	Definition essay	Argumentative essay	Comparative genre essay	Parody/satire
Grade 12	Research paper	Position paper	Response to literary criticism	Irony

ANNOTATED EXEMPLAR Literary Response

GRADE 6

The writer establishes her topic, making an amusing observation to hook the reader, and writes a thesis that uses complex sentence structure to establish the organization of the essay.

Conflicts can not be avoided. In life, without conflicts things would be very dull. In the book *Sixth Grade Can Really Kill You*, this is what the author, Barthe DeClements, demonstrates. Helen is the protagonist with a learning disability that triggers problems and conflicts—conflicts at home, conflicts at school, conflicts within herself.

The most crucial conflicts of the book are the ones she has with herself. Worrying, sulking, frowning, Helen fears that she will flunk the sixth grade. Her teacher has warned her parents of this. Helen fears her report card and her grades on it. She knows what is coming because of her troubles in school. "I didn't lift a book until report cards came back."

The writer's topic statement uses excellent vocabulary (oracal) to make a strong claim and to expand upon its place in her discussion.

The writer uses a direct quote although it isn't embedded clearly in the context of her paragraph.

When Helen worries about school, she creates conflicts with herself. Helen worries that Mr. Marshall does not want her anymore because of the firecracker she sets off at the end of the book. She worries and frowns, making more problems and conflicts. Most of Helen's major conflicts stem from school and her reading difficulties.

Helen has conflicts with her mom that emphasize her reading difficulty. Helen argues with her mom about reading. "She kept telling me to please try and read without using my finger (Helen talking about mom). I kept telling her that if I didn't I would lose my place." Helen again tries to get out of reading practice with her mom. And then the reader finds Helen and mom arguing about same thing. Without a doubt, Helen's relationship is affected by her reading problem.

The writer has employed CEE to make a claim about the character's reading difficulty.