Welcome Back!
Inquiring Young Minds Want to Know

Morning Wake-up!
Too often we give young people cut flowers instead of TEACHING them how to GROW their own Plants!

Success is going from failure to failure with no loss of enthusiasm!
Novelty intriguing the MIND and inspires Curiosity!

Let’s Review

- What questions did we find answers to yesterday?

- How did we find the answers? What did we do?
What is Black?

• What is your favorite color?

• Today’s question we are going to explore
  • What is black?
Question: What is black?

What happens when we add water?

• Using the eye dropper, drop three drops of water near each dot.

• Hold the paper up
What Happened?

At first __________________, but

now____________________.

What are you curious about?
Let’s design a question to test

4 Question Strategy

0 What does _____________do? How does it act?

0 What materials are available for conducting an experiment on ____________?

0 How can we change the materials to affect what ______________ does?

0 What can we measure or observe that would tell us if changing __________ affects ______?
Discussion of Content

Let’s Try again

- Make observations of your object.

- What can it do?
What Materials Are Available For Conducting an Experiment on____________________

How can we change the materials to affect what the gobstopper does?
How can we measure the response of the change?

4 Question Strategy

- Tool to use to help students “think” through the design process
- Allows students to brainstorm additional ideas for experiments
- Can start anywhere in the process
Terms

- Use the previous experiment
  - What did we change?
  - What was the reaction to the change?
  - What did we keep the same in the experiment?
  - What did the first test serve as?

Break

Clean up and be back in 10 minutes!
As you are relaxing, think of examples of the types of questions and connections to your classroom.
Let's Make Some Meaning and Review Jigsaw
Many Levels of Inquiry

Level of Support in Inquiry

- Verification
- Structured
- Guided
- Open
Using the materials you have at your desk, follow the directions very carefully to create the object.
Make some observations

0 Put your mouth in the middle and blow! Remember to blow through the sticks, not through the straws.

0 What happens? In your science journal, jot down some notes.

Share our Data

0 Pair Share
0 Quad Share
0 Class Share
How could we change our materials that might affect what we hear?

<table>
<thead>
<tr>
<th>Straws</th>
<th>Sticks</th>
</tr>
</thead>
</table>

What could we observe or measure that might tell us if moving the straws closer together made any difference in the sound we hear?
Question

- Investigate the effect of changing

Hypothesis

- Now that you have some experience with your sound machine, what do you think will be the relationship between the sound and the location of the straws?

- Try it again and collect your data.
Data Analysis

- What did we find out?
- Was the sound different?
- Does the data support what you thought would happen?
- What questions do you have?

How Children Learn Science

- Children come to the classroom with preconceptions about how the world works.
- May learn for test—but revert back to old ideas

How Children Learn Science

To develop competence:
- Deep understanding of factual knowledge
- Create connections between facts/ideas to concepts
- Organize knowledge to retrieve it/apply it


#1: Prior Knowledge and Experiences

- New understandings are constructed on a foundation of existing understandings and experience

#2: Big Ideas of Facts

- Students need both!


#3: Learning to Learn

- We need to help students to become independent thinkers and learners

Closing thoughts...
3-2-1!