

Math & Science in the Elementary Classroom

CRISP Workshop
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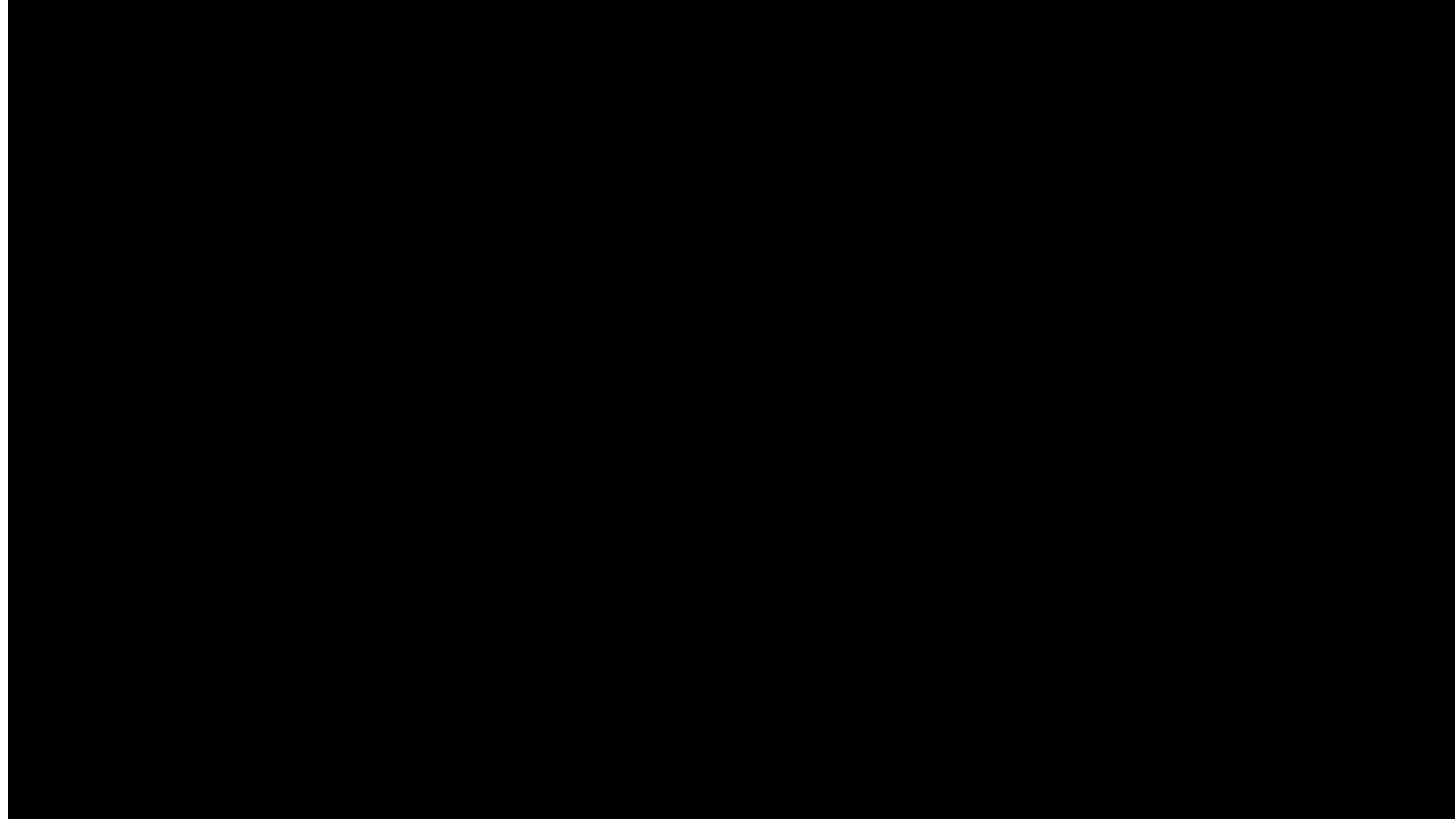
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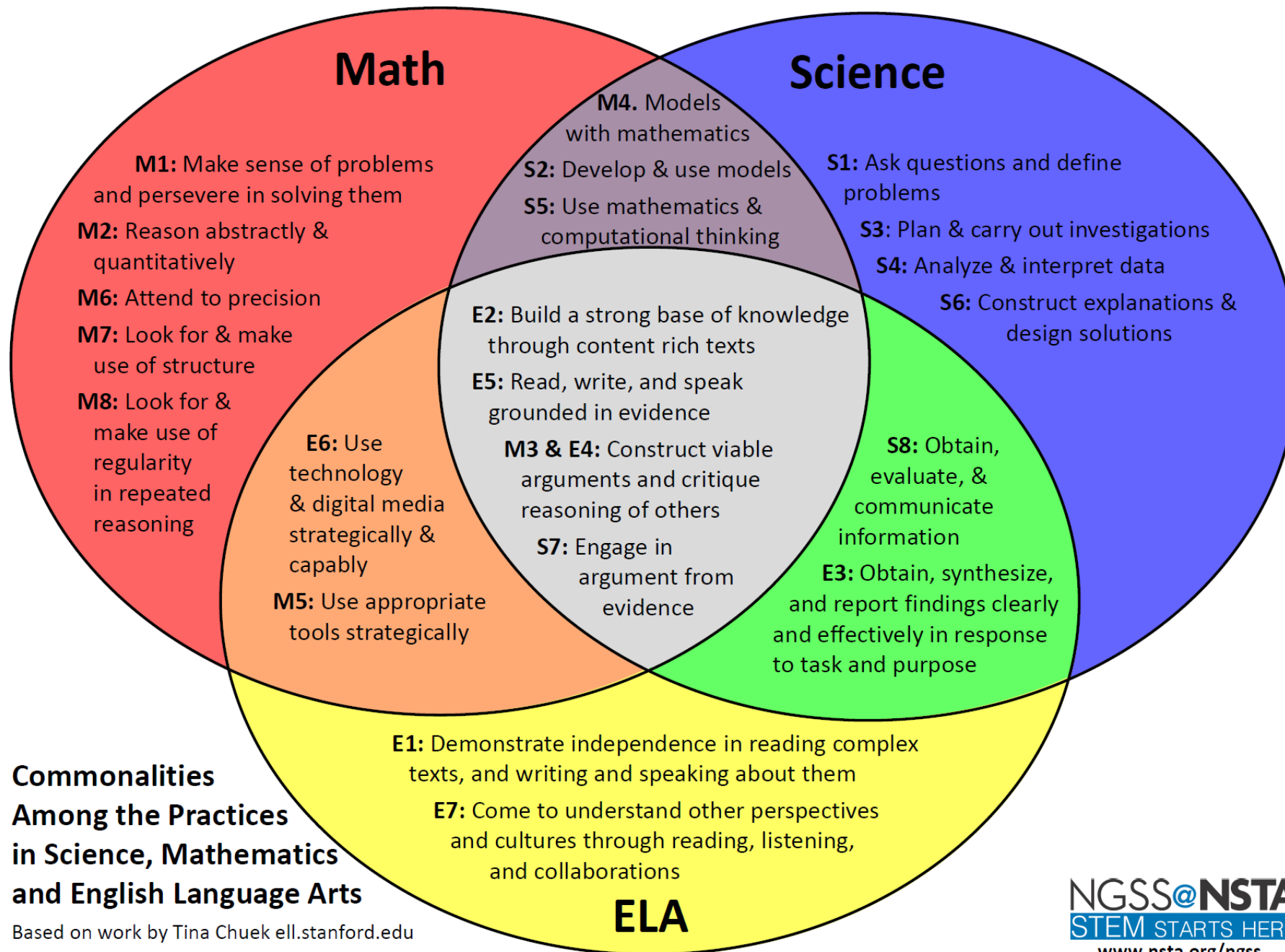
Agenda

- I. Standards & Inquiry Overview
- II. 3rd Grade Activity
- III. 4th Grade Activity
- IV. 5th Grade Activity



How to Read the Standards





INQUIRY: The 5-e Model

Engagement

Exploration

Explanation

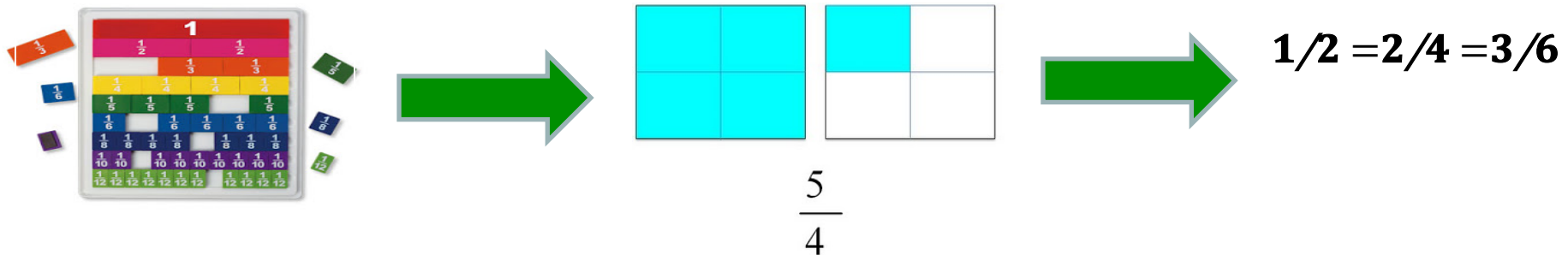
Elaboration

Evaluation

CPA Model

Concrete – Pictorial - Abstract

<http://www.mathsnoproblem.co.uk/concrete-pictorial-abstract>



**How does CPA Model
apply to teaching kids subtraction?**

$$232 - 156?$$

**How does it
apply to teaching fraction division?**

$$\frac{2}{3} \div \frac{1}{6}$$

3rd Grade Activity



Standards Addressed

3-PS2-2

Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

3.MD.B.4

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

Deep Thoughts

🤔 Can you incorporate this engineering standard:

3-5-ETS1-3

Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Deep Thoughts

🤔 How about this math standard?

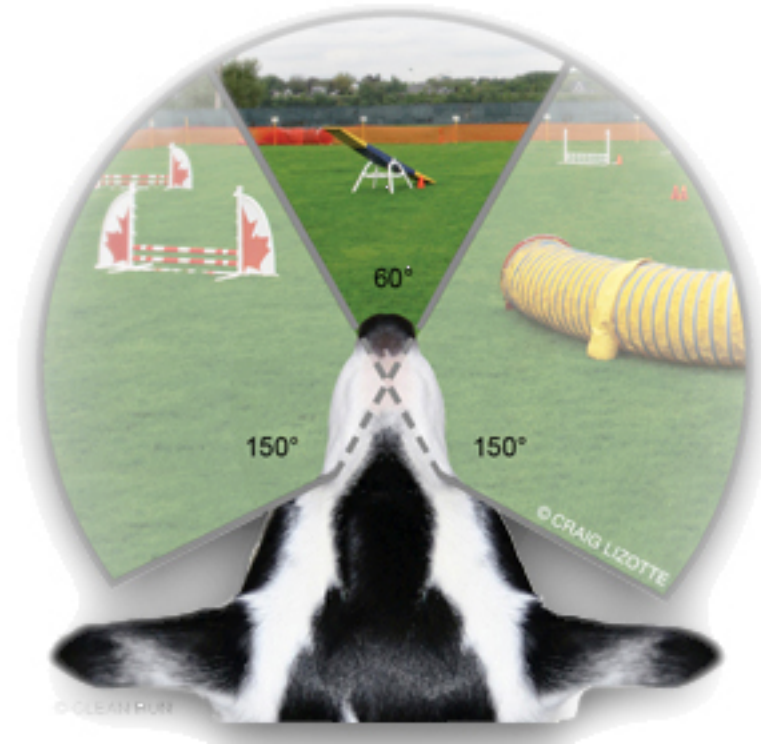
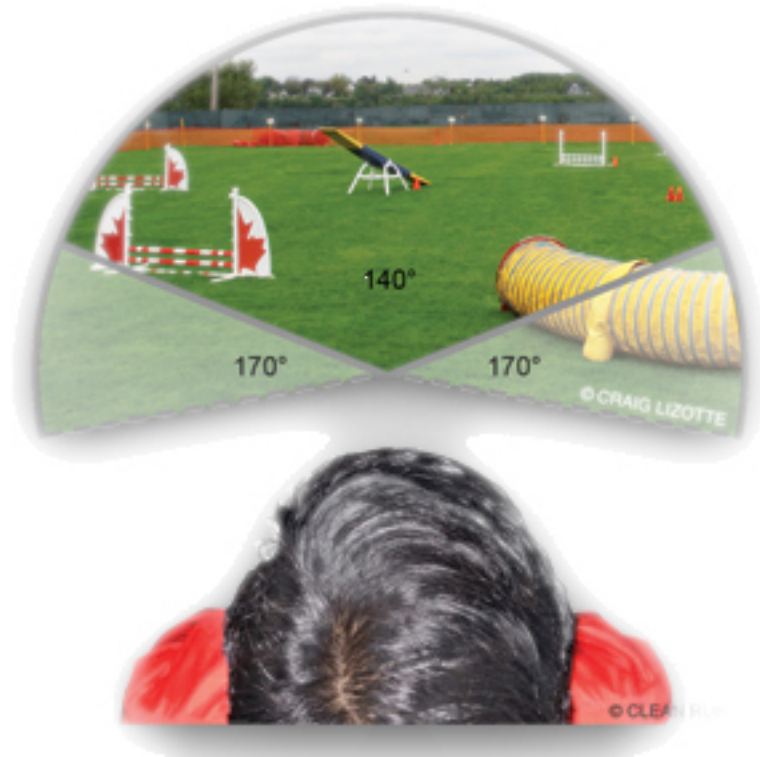
3.OA.D.9

Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

Deep Thoughts

🤔 How can you make this activity more inquiry-based?

4th Grade Activity



Simulating Animal Eyes

Students use:

- Paper Towel rolls to simulate chameleon
- Kaleidoscope to simulate fly
- Magnifying glass to simulate spider
- Plastic mirror to simulate frog



Making a Clinometer

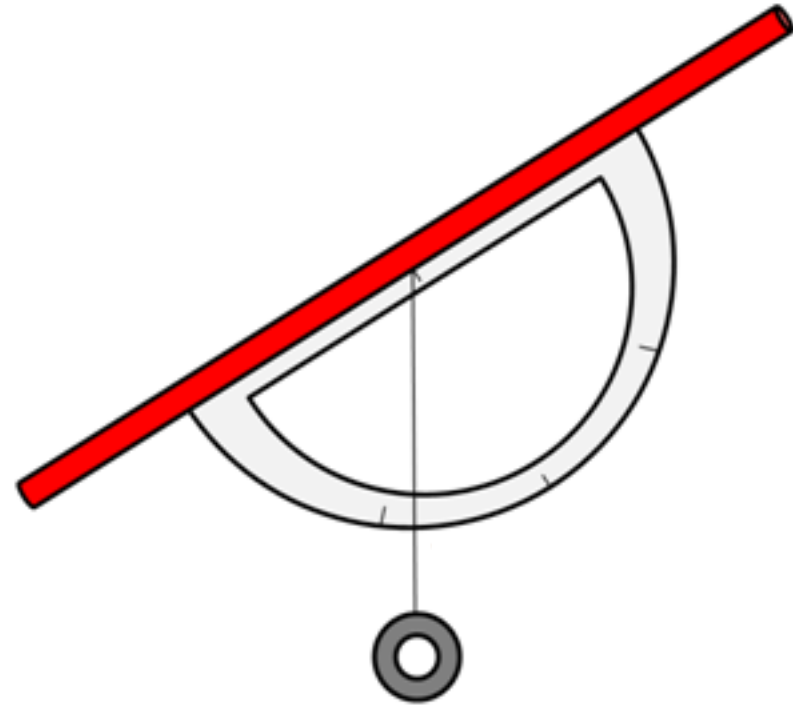
Materials

Protractor

Washer

String

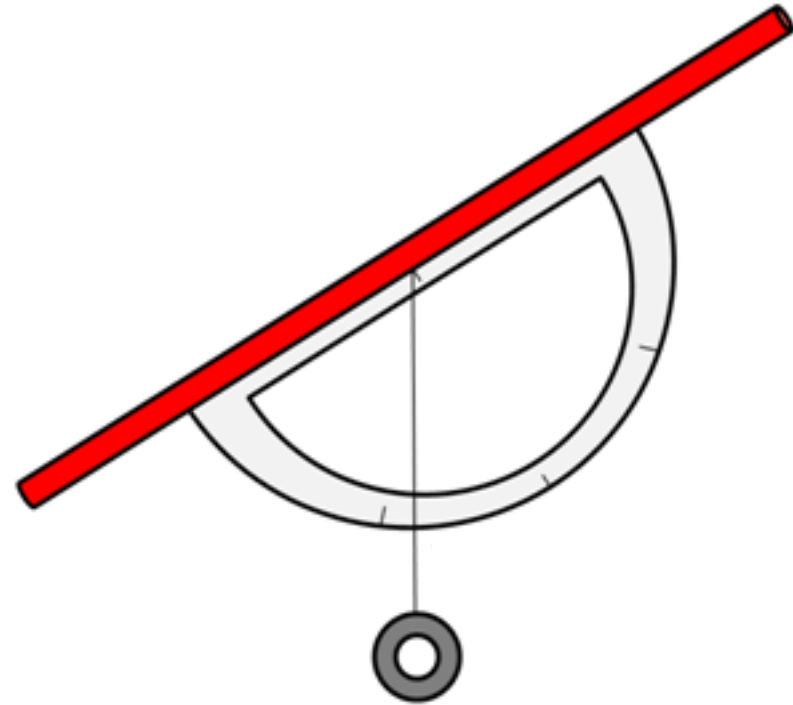
Straw (optional)



Making a Clinometer

Stop when the height of the object you're estimating is registering 45° on protractor.

Height of object is equal to your distance away from it + distance from ground to your eyes



Standards Addressed

4-LS1-2

Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

4.MD.B.5 & 6

Recognize angles as geometric shapes; understand concepts of angle measurement; use protractor

5th Grade Activity



Standards Addressed

5-PS1-3

Make observations and measurements to identify materials based on their properties.

5-PS1-4

Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

5.G.A.2

Represent real world and mathematical problems by graphing points in the first quadrant...; interpret coordinate values of points

Inquiry Extensions

#3

What is one additional question you would like to research using these supplies?

Deep Thoughts

🤔 Can you incorporate these math standards?

5.MD.C.3

Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

5.MD.C.4

Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.