

Math and Science

Perfect Together!



Objectives

- Identify ways of integrating math and science through data collection.
- Use *Walking Functions* to practice interpreting graphs.
- Explore some useful online resources to use in the Math and/or Science Classroom.



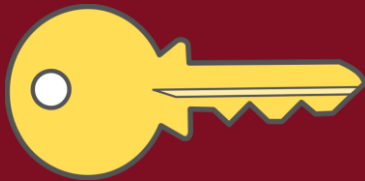
Why is STEM Important



Math and Science Together

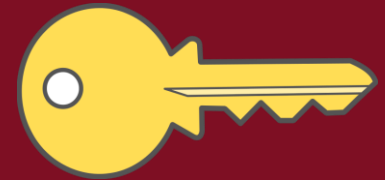
MATHEMATICS
is not about
numbers, equations,
computations, or
algorithms:
it is about
UNDERSTANDING.

William Paul Thurston



MATHEMATICS
IS THE
DOOR
AND
KEY
TO THE
SCIENCES.

BOGIE BROWN



The only way
to **learn**
mathematics
is to **do**
mathematics.

PAUL HALMOS

What are you doing “NOW”?

How are you integrating math and science in your classroom?

Take a few moments and write down your strategies on post-it notes.

Work with your table group to design a poster depicting what might be included in the perfect science and math classroom.

Walking Functions

Walking functions are a great way to teach your students how to read and interpret graphs.

[Exploratorium Website](#)

[Walking Function Activity](#)

- After completing your group's graph...be prepared to share with the entire group.



Walking Functions Debrief

-Each team will share and explain their graph.

Carousel Activity

-How could this activity be used with our 3rd-5th graders?

Math Standards

Measurement and Data

4.MD

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving whole numbers and/or simple fractions (addition and subtraction of fractions with like denominators and multiplying a fraction times a fraction³ or a whole number), and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

B. Represent and interpret data.

4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

Math Practice Standards

Standards for Mathematical Practice

Good mathematicians...

1. make sense of problems and keep trying even when problems are challenging.
2. use numbers to describe situations.
3. justify their strategies and listen to see if other people's ideas are logical.
4. make models of situations.
5. use a variety of mathematical tools.
6. try to be accurate and revise their thinking when they make an error.
7. use the structure of a problem to help them find answers.
8. look for and use patterns.

Science Practices

- **Science and engineering practices** are the practices that scientists and engineers use when investigating real world phenomena and designing solutions to problems. There are eight science and engineering practices that apply to all grade levels and content areas.
 1. Asking questions (science) and defining problems (engineering)
 2. Developing and using models
 3. Planning and carrying out investigations
 4. Analyzing and interpreting data
 5. Using mathematical and computational thinking
 6. Constructing explanations (science) and designing solutions (engineering)
 7. Engaging in argument with evidence
 8. Obtaining, evaluating, and communicating information

Technology Resources

Internet Resources

CPALMS

Illuminations

MESSENGER

Action Plan

- Brainstorm ways to use the walking function activity or the online resources in your classroom.
- Develop a list of “ideas” to share with the group for classroom implementation.

Be Creative

Just for Fun

