



START to STEM

A turn-key solution to STEM!

What is Start to STEM?

Start to STEM is a comprehensive STEM program designed to bring innovative products into the classroom to connect STEM principles to the real world. You have the option to customize your program to create the best solution for your school. We offer:



Engaging STEM Products

- Equipment for a class size of 24
- Centralized around a core STEM topic area
- Reusable for years to come



Day-by-Day Lesson Plans

- Aligned to national education standards
- Scalable across different grade levels
- Includes lessons, vocabulary, equipment instructions, student worksheets, and more



Virtual Professional Development

- Live virtual training with a STEM expert
- Expanded overview of equipment and activities
- Opportunity to learn best practices in using the equipment and teaching real-world applicable STEM lessons

Ready to start your STEM journey?

Whether you're a STEM veteran or new to STEM teaching, we're here to help. The Start to STEM program was designed as a turn-key solution that focuses on real-world applications of STEM fields through hands-on and inquiry-based methods. We're here to provide you the best teaching and learning experience for classrooms, makerspaces, and everything in-between.

Contact Us Today!

stem-supplies.com/start-to-stem | orders@stem-supplies.com | (855) 826-4540

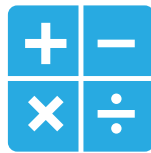
Historically, mathematics has been taught through rote learning, but like all STEM fields, math is retained best when taught through hands-on experiences. The Start to STEM Mathematics Kits include physical tools to help students explore place value, money, geometry, mathematic operations, fractions, ratios, and probability. Familiar topics become new again with fun manipulatives that keep learning active and engaging.

The Start to STEM Mathematics Complete Kit includes hands-on equipment for 24 students, a comprehensive curriculum manual aligned to the Common Core Math Standards, and a three-hour virtual professional development training. You also have the option to purchase the equipment or the manual alone, as well as the equipment and the manual without the training.

Top Subject Areas Covered:



Geometry



Equations



Ratios



Probability

Lesson Objectives:

Daily Instruction Topics	Example Learning Objective
Understanding Place Value	Define a base ten numeric system.
Math in Motion	Practice speed math skills by racing to solve the equation.
Money Sense	Draw relationships between different valued coins.
Measurement	Learn how to properly use measurement tools to find length, width, height, and angle.
Geometry	Define and create different polygons such as triangles, squares, and parallelograms.
Multiplication	Identify, analyze, and explain patterns in arithmetic through multiplication problems.
Fractions and Ratios	Identify fractions as parts out of a whole.
Probability	Conduct experiments to determine the probability of different events.



Learning Objectives

- Introduce students to the concept of money.
- Draw relationships between different valued coins.
- Learn how to sum different monetary denominations.

Equipment List

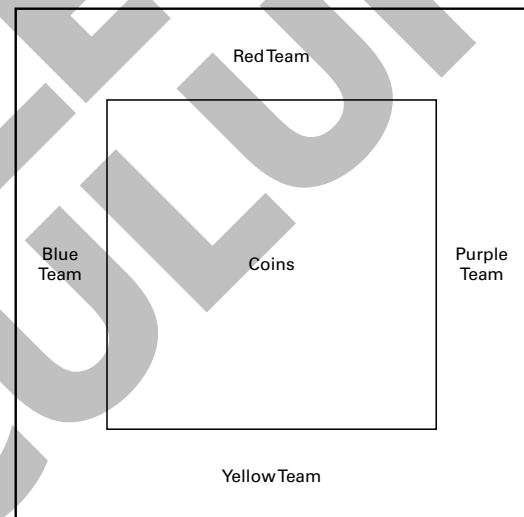
- Run for the Money™, 1 Ea
- Vinyl Floor Tape, 1 Ea

Suggested Timing

- 25+ Minutes

SET UP

- Clear a large play area such as a large classroom or basketball court.
- Adjust the boundaries and size of the play area according to the age and ability of players, i.e., older students can use a larger area than younger students. Use the vinyl floor tape to mark play area as necessary.
- Scatter coins face-down around the center of the play area.
- Divide the class into four equal teams and designate each team a color: red, blue, purple, or yellow. Send teams to their corresponding color areas based on the diagram to the right.
- Give each team a "Run for the Money™" student worksheet.



TEACH

- In teams, have students complete the "Run for the Money™" student worksheet to introduce the value of each coin in the game.
- As a large class, go over the worksheet answers. Use coins from the Run for the Money™ kit to show students numerical values for each.
- Send students to their designated color areas around the scattered coins.
- Explain the game play instructions to students:
 - At the signal, students rush to collect coins and return them to their edge of the play area.
 - Students may collect only one coin at a time.
 - Students play until all coins can be collected.
 - When all coins have been collected, teams add up the total on the coins. The team with the highest total wins.
- Play the Run for the Money™ game according to game play instructions and have students determine which team collected the highest total value of coins.

Common Core Alignment

Mathematics Standards by Domain

- Counting & Cardinality
- Measurement & Data

Vocabulary

- **Money (or Currency)** – coins or bills accepted as payments for goods and services
- **Coin** – a flat, round piece of metal traded as a form of money
- **Bill (or Banknote)** – a flat, rectangular piece of paper traded as a form of money
- **Amount** – the total value of all currency, i.e., coins and bills
- **Change** – the remaining value of currency after a good or service has been purchased
- **Penny** – a coin valued at 1 cent
- **Nickel** – a coin valued at 5 cents
- **Dime** – a coin valued at 10 cents
- **Quarter** – a coin valued at 25 cents
- **Dollar** – a coin or bill valued at 100 cents

Worksheets

- Run for the Money™ (Beginner), p 30
- Run for the Money™ (Advanced), p 31

REFLECTION QUESTIONS

- What strategy did you use to get to the highest total value?
- For this game, is it better to collect quarters or dimes?
- How many pennies are in a dime?
- How many quarters are in a dollar?

TEACHING SUGGESTIONS

- There are two versions of the “Run for the Money™” student worksheet included in this manual. Use the version that is appropriate for the age level you are working with, beginner or advanced.
- Indoor play is recommended, but if you have a limited size indoor space, take this activity outside. Protect the coins from damage and dirt by placing them on a sheet or a tarp.
- Before this lesson, determine which students will be on which color team. Ask students to wear something in the color that corresponds to their team. Additionally, you can do a craft where students make their own paper bracelets/arm bands before game play.
- Before game play, lay out a combination of five random coins and ask students to calculate the total.
- After giving students the objective to win the game, allow them time to strategize how they want to collect coins before playing.
- Repeat the game play several times to allow students a chance to change their strategy.

ADDITIONAL LESSON OPTIONS

- Change the objective of the game to be to collect the lowest total value of coins. Game play will still end when students collect all coins. Discuss how the strategy changes when you want to collect the smallest total value.
- Give students a predetermined value and repeat the game play. The team that gets a value closest to the value wins. In this version, not all coins need to be collected. Student groups can determine when they would like to stop running for coins.

TEACHER REFLECTION

RUN FOR THE MONEY™

Name: _____



Penny = 1¢



Nickel = 5¢



Dime = 10¢



Quarter = 25¢

Add the coins.

1.



= _____

2.



= _____

3.



= _____

4.



= _____

5.



= _____

RUN FOR THE MONEY™

Name: _____

Solve the word problem.

- Javier buys a pack of gum and a pencil using a \$5 bill. His change is \$1.12. How much money did Javier spend? _____
- Ali is saving money from babysitting to buy a video game. The game costs \$60. Ali makes \$10 per hour babysitting. How many hours should Ali babysit to buy the game? _____
- Imani and Jada are opening a lemonade stand. Each cup of lemonade costs 25 cents. At the end of the day, they have made \$4. How many cups of lemonade did they sell? _____
- Emma owes Aiden \$10. She can pay him \$2 each week. How many weeks will it take Emma to pay Aiden the full \$10 owed? _____
- Mason needs \$32 to buy groceries. He already has \$14.25. How much more money does Mason need to purchase groceries? _____

Compare each sum of money. Write a greater than, less than, or equal sign in the box.

6. 

7. 

8. 

Use the chart on the right to answer questions 9 and 10.

9. You have \$10. Write a list of three items you can buy without having any change. _____

10. You have \$10 and purchase three items. Your change is \$2. What did you purchase? _____

Item	Cost
Chips	\$2.00
Soda	\$1.50
Sandwich	\$7.75
Ice Cream	\$2.50
Cookie	\$1.50
Salad	\$5.25
Milk	\$0.75