

Name _____

Pick a Project

Project 10A

Tiles

Tiles can be found on floors, walls, tabletops, roofs, and even in showers. Tiles can be made from ceramic, stone, glass, and many other materials.

The art of tiling goes back thousands of years. Tiles have been used to form simple square floors and complex mosaics. Have you seen tiling at an art museum?

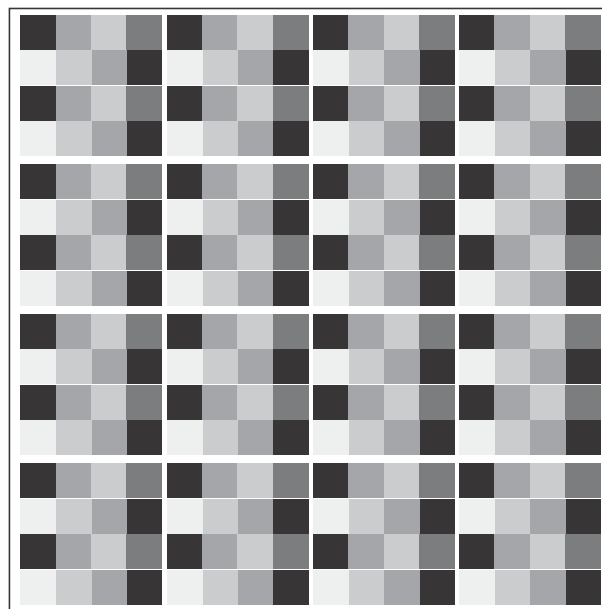
Many people have ceramic tiles on their floors. Glazed tiles are resistant to water damage and staining. The flooring is also easy to clean because dirt, stains, and liquids rest on the surface. A simple mop will keep the tiles as good as new. They are also hard to break.



Your Project Design with Tiles

Make a design using tiles! While there are many shapes to be made from tiles, squares often make the most sense.

A square has equal length and width. Squares tessellate, which means that you can place them together without having gaps. You have 60 square tiles. Choose the size of the tiles. You can choose any size from 3-inch tiles ($\frac{1}{4}$ foot) to 10-inch tiles ($\frac{5}{6}$ foot). Using the size you choose, find the area that you can tile. Then make a design using all of your tiles. Your design can be any polygon and any number of colors. Try something creative!



Materials: graph paper, paper, pencil

Name _____

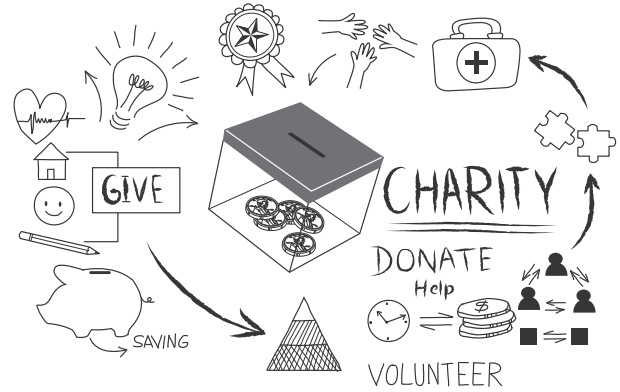
Pick a Project

Project 10B

Acts of Charity

Many groups give to charity. They organize promotions that involve people who donate their time and money. They also use this opportunity to make the charitable cause more widely known to the public.

Your school might put on a bake sale or a car wash. The money that is received may go to a charity. Authors might donate a part of each book sale to those in need. Sports players might donate money for every goal scored or every home run.



Giving to those in need is a great way to help the world around us!

Your Project Set Up a Charity Event

Plan a charity event at a place that can hold a large number of people, such as a theater or restaurant.

Decide how many people should attend the event. Maybe it's 200 people? or more? You decide.

At least 4 different groups of people should be invited to the event. Plan your invitation list, describe and represent each group as a fraction of the number of people who will be invited to the event.

Design an invitation. It should describe and explain the event, and list 2 or 3 different charities that will receive money from the donations. List the names of each charity and the fraction of the donations that each one will receive.



Materials: paper, colored pencils, pencils

Name _____

Pick a Project

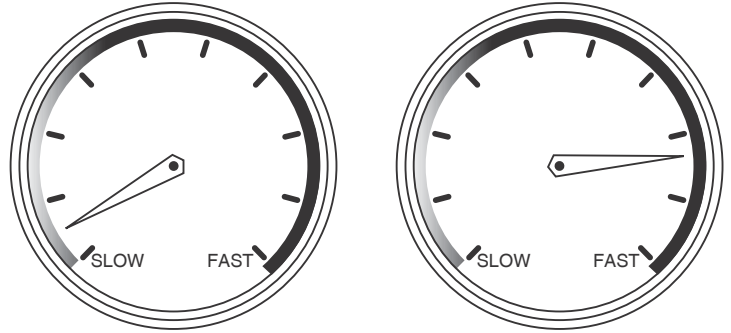
Project 10C

The Speed of Things

A jet aircraft is a fast vehicle—much faster than your car! While the bus or car you may ride in travels at a speed often measured in miles per hour, or “mph,” jet aircraft speeds can be measured in miles per minute.

For example, a jet aircraft’s speed can be expressed as 10 miles per minute. If you want to figure out its speed in miles per hour, multiply the 10 miles per minute speed by 60.

Jets travel so fast that they use another measure: Mach. It is said that an aircraft is flying at Mach 1 if its speed is equal to the speed of sound in air.



Your Project Write and Perform a Skit

The name of your skit is “The Need for Speed.” First, research fast-moving things. Choose one. It can be a race car, a rocket ship, or even an animal, such as a peregrine falcon. Then create your skit.

Write about the speed of your choice in miles per minute. Your skit will describe a journey taken at that speed. The distance of the journey needs to be in a whole number of hours or minutes. Finally, act out the journey as the vehicle or animal that you have chosen. And make sure to say how far you traveled!



Remember, no matter the speed, the show must go on!

Materials: paper, pencil

Name _____

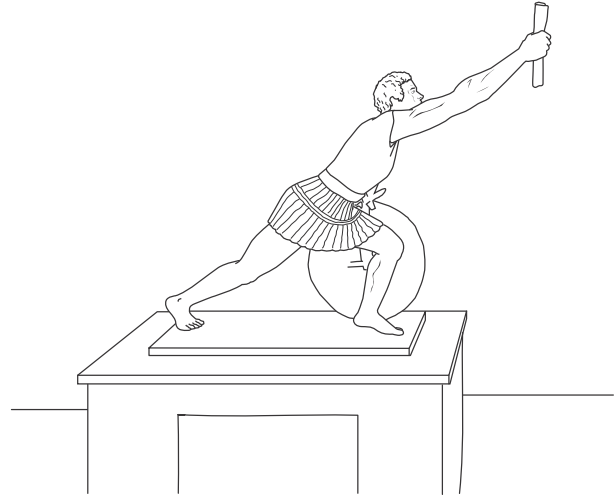
Pick a Project

Project 10D

Marathons

It may seem odd to have a road race that is 26 miles and 385 yards long. However, the marathon is an extremely popular race run throughout the world.

The marathon comes from ancient Greece. The legend is that Philippides ran 150 miles in 2 days. Then he ran about 25 miles from Marathon to Athens to announce that the Persians had been defeated at the Battle of Marathon. It was said that he ran the entire distance without stopping. Whether the story is true or not, nobody knows.



Today marathons are a regular occurrence. People run marathons in every state. There are over 1,200 runners who have completed "The States" challenge by completing a marathon in each of the 50 states!

Your Project Make a Game about Marathon Winners

Research the history of the marathon in the Olympics. The marathon was an event at the first Summer Olympics in 1896.

Make a math game with your group. Use information you found about Olympic marathons. The questions for the game should involve fractions and fraction operations – addition, subtraction, and multiplication of a fraction by a whole number.

Design the rules of the game, what determines the winner, and the point values for answering questions of various difficulty.

Materials: posterboard, index cards, pencil

