

RUN AN ICE CREAM SHOP MATH PROJECT

In this math project, students will use beginning fraction skills to work with the various aspects of running an ice cream shop:

- **working with simple fractions**
- **identifying the part and the whole**
- **representing fractions with a visual model**
- **fractions on a number line**
- **comparing simple fractions**

and more!



CREATED BY SHELLEY GRAY

ABOUT THIS RESOURCE

Are you looking for a way to reinforce fraction concepts in an engaging way that helps your students make connections? “Run an Ice Cream Shop” is a **real-life math project** where students will complete nine different tasks, each one focusing on beginning fraction skills. This project will help your students see how fractions are used in real life.

You might choose to print specific tasks to use during Math centers, or you might make a booklet out of all of the tasks and let your students choose which one to do when. The choice is yours.

Take a look at what you'll find inside this math project:

TASK #1: PLANNING YOUR ICE CREAM SHOP

This activity will get students excited about the project. They'll be brainstorming a name for their ice cream shop and designing an advertisement.

TASK #1 **PLANNING YOUR ICE CREAM SHOP**

You're starting your very own ice cream shop!

First, think of a name for your ice cream shop.

It'll be very important to advertise! Design a poster that you can put up around town.

TASK #2: MAKING CONES







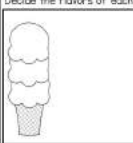
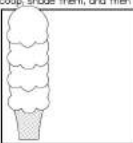
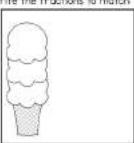
The ice cream cones are the most popular items at your shop! Shade each picture according to the fractions.

Skills: simple fractions, visual models

TASK #2 **MAKING CONES**

The ice cream cones are the most popular items at your shop.

Shade each cone according to the fractions.

 $\frac{1}{3}$ chocolate $\frac{2}{3}$ strawberry	 $\frac{2}{3}$ mint chip $\frac{1}{3}$ vanilla	 $\frac{3}{3}$ chocolate chip cookie dough
 $\frac{2}{4}$ rainbow $\frac{1}{4}$ chocolate $\frac{1}{4}$ cherry cheesecake	 $\frac{3}{4}$ rocky road $\frac{1}{4}$ mint	 $\frac{1}{4}$ vanilla $\frac{1}{4}$ swirl $\frac{1}{4}$ cherry $\frac{1}{4}$ fruit explosion
		

Decide the flavors of each scoop, shade them, and then write the fractions to match.

TASK #3: SERVING GROUPS

A lot of families and groups come into your ice cream shop. Let's take a look at a few of them who visited today!

Skills: *fractions in numbers, fractions in words, fractions on a number line*

TASK #3 SERVING GROUPS
A lot of families and groups come into your ice cream shop. Let's take a look at a few of them who visited today!

This is the Doyle family. Three of them ordered waffle cones and one of them ordered a regular cone.

Type of Cone	Fraction of the Total Cones	Write the fraction in words.
Waffle		
Regular		

Next, a soccer team arrives! Five people order vanilla cones. Three people order chocolate cones. Two people order rainbow cones.

Type of Cone	Fraction of the Total	Write the fraction in words.
Vanilla		
Chocolate		
Rainbow		

How many soccer players are there in all? _____

Then a group of six friends comes in.

TASK #4: SUPER SUNDAES

Sundaes are the next most popular item at your ice cream shop. Let's see what you're making today!


Skills: *fractions in numbers, fractions in words, fractions as pictures*

TASK #4 SUPER SUNDAES
Sundaes are the next most popular item at your ice cream shop. Let's see what you're making today!

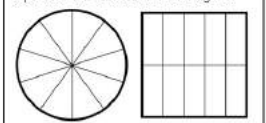
You're making an order of 10 sundaes. The tallies below represent the types of sundaes. Write a fraction for each one.

Type of Sundae	How many? (tallies)	Write a fraction.	Write the fraction in words.
hot fudge			
strawberry			
butterscotch			


Represent the sundaes using the pictures:



Represent the sundaes on each diagram:

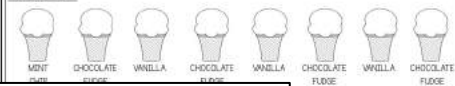


You have a new order for 6 sundaes. The customer told you to make some hot fudge, some chocolate chip, and some strawberry. Decorate each sundae and then write a fraction for each kind.



$\frac{\quad}{6}$ hot fudge
 $\frac{\quad}{6}$ chocolate chips

ORDER #3:



TASK #5: ORDER UP!


Here are just a few of the orders from today! Represent each order in a variety of different ways.

Skills: *fractions in numbers, visual models*

TASK #5 ORDER UP!
Here are just a few of the orders from today! Represent each order in a variety of different ways.

ORDER #1: 1 - chocolate, 1 - peanut butter, 1 - strawberry


Represent the order in pictures:



Represent the order with fractions:


$\frac{1}{3}$ chocolate
 $\frac{1}{3}$ peanut butter
 $\frac{1}{3}$ strawberry

Represent the order using fraction models:



ORDER #2: 3 - cookie dough, 1 - rainbow, 2 - peanut butter, chocolate


Represent the order in pictures:



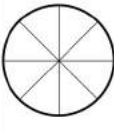
Represent the order with fractions:

$\frac{3}{6}$ cookie dough
 $\frac{1}{6}$ rainbow
 $\frac{2}{6}$ peanut butter chocolate

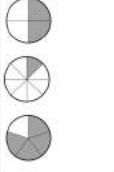
Represent each kind of ice cream with a visual model:



Now represent all 8 cones on this model:



THINK FAST!
Write a fraction for each picture:






TASK #6: WAFFLE CONE OR REGULAR?



Let's see which type of cone is more popular.


Skills: picture graphs, fractions as visual models, comparing fractions with the same denominators

TASK #6 WAFFLE CONE OR REGULAR?
Let's see which type of cone is more popular.

ORDER #1: What fraction of the cones are waffle cones?
Waffle Cones:  _____
Regular Cones:  _____
What fraction of the cones are regular cones?

How could you use this visual model to represent all of the cones?  Fill in the blanks with the fractions. is greater than

ORDER #2: What fraction of the cones are waffle cones?
Waffle Cones:  _____
Regular Cones:  _____
What fraction of the cones are regular cones?

How could you use this visual model to represent all of the cones?  Fill in the blanks with the fractions. is greater than

THINK FAST! Represent each fraction in two different ways:
 three-fifths one-half

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TASK #7: OTHER COLD TREATS

Your ice cream shop offers other cold treats as well!


Skills: problem-solving with fractions, representing fractions with pictures and visual models

TASK #7 OTHER COLD TREATS
Your ice cream shop offers other cold treats as well!


You open up a box of popsicles. $\frac{4}{10}$ are red, $\frac{3}{10}$ are blue, and $\frac{3}{10}$ are orange. How many popsicles are there in all? How do you know? _____

Draw and shade the popsicles: _____

In each box of ice cream bars there are 6 bars. In the box that you just opened you found that 2 of them were broken!

Represent the ice cream bars: 

What fraction of the ice cream bars are broken? What fraction of the ice cream bars are not broken?

These Rocket Pops got left on the counter and two-thirds of the box melted! What fraction of the box of Rocket Pops did not melt? 


Write the fraction: th

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

TASK #8: ROOT BEER FLOATS

Root beer floats are a popular menu item. Let's take a look at how we make each one!




Skills: representing fractions

TASK #8 ROOT BEER FLOATS
Root beer floats are a popular menu item. Let's take a look at how we make each one! 

Adding the ingredients in layers is your secret to the best root beer float in town! First, you add $\frac{1}{3}$ cup of ice cream.

Represent the ice cream in three different ways:   

Then you add $\frac{1}{4}$ cup of root beer.

Represent the root beer in three different ways:   

THINK FAST! So far, is there more ice cream or more root beer? How do you know? _____




The next step is to add $\frac{2}{3}$ cup ice cream.

Write this fraction in words:

Then you add $\frac{2}{4}$ cup root beer.

Write this fraction in words:

Last, you top it off with $\frac{1}{2}$ cup whipped cream. Your root beer float is complete!

Represent the whipped cream in three different ways:   

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TASK #9: THE ICE CREAM TRUCK

Today you're heading out to the streets with your ice cream truck!

Skills: representing fractions, fractions on a number line, fractions in word form, comparing fractions

TASK
#9

THE ICE CREAM TRUCK

Today you're heading out to the streets with your ice cream truck!

In the first 30 minutes you sell the following items:

How many items did you sell in the first 30 minutes?
Write a fraction of the total items for each:

THINK FAST! Look at the fraction that you wrote for ice cream. What does the number on the top mean? _____
What does the number on the bottom mean? _____

Fill in the missing fractions along the number line. The each item belongs:

Next, a group of kids comes to your truck. Here is what they buy:

Could you represent these items using this visual model?

Item	Fraction of the Total (in numbers)	Fraction of the Total (in words)

First, fill in the missing numbers on the number line. Then represent each item on the number line.

Show how you could compare the fractions using a greater than (>) or less than (<) symbol.

THINK FAST! Which fraction is greater? Write a < or > symbol.

$\frac{2}{5}$ $\frac{5}{5}$

$\frac{3}{4}$ $\frac{1}{4}$

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

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PLUS A BONUS BRAINSTORMING PAGE

to make more real life connections

lets brainstorm! Fractions are ALL around us! Can you fill this page with ideas? Where might you find fractions in each situation?

baking a cake

building a shed

cleaning the house

feeding a pet

having a picnic

working at a car wash

budgeting your money

buying groceries

going on a nature walk

painting your bedroom

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ANSWER KEYS ARE PROVIDED TO MAKE SELF-CHECKING EASY!

WAYS TO USE MATH PROJECTS IN YOUR CLASSROOM:

Math projects are an ideal way to consolidate learning. I recommend using them as an engaging activity AFTER skills have been learned rather than during learning. You will likely find that engagement is very high and that your students ask to do more of these!

There are many ways to use math projects in your classroom. Some of the most popular are:

- a small-group or pairs activity
- a guided math activity to allow you to see where your students are struggling
- a fun, rewarding way to engage your early finishers
- a low-prep, easy-to-implement activity for a substitute teacher

Enjoy!

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