

MATH BUNDLE #2

Project Based Learning

5th Grade
Print & Digital

Soccer Tournament

Project Based Learning

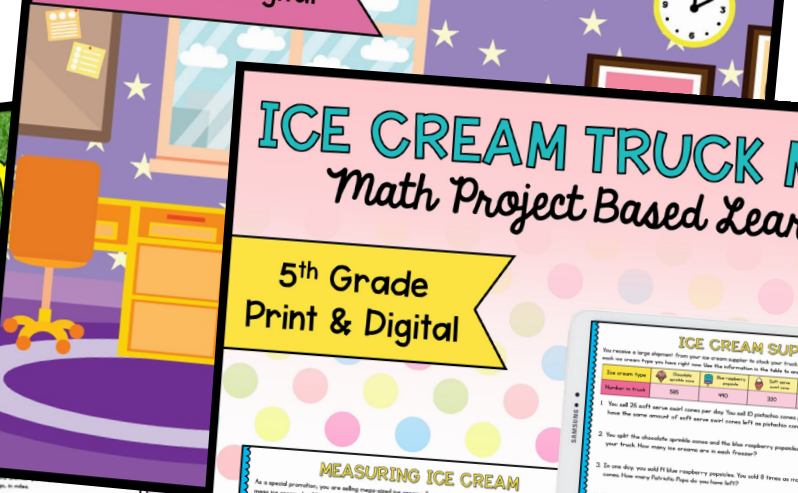
5th Grade Math
Print & Digital



Design, Create, Dream

Project Based Learning

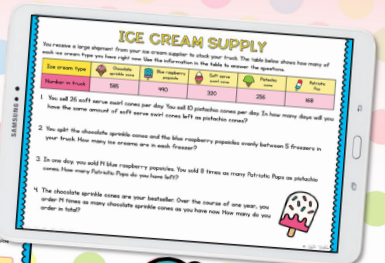
5th Grade Math
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5th Grade
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ICE CREAM TRUCK MANIA

Math Project Based Learning



Mag
CORE

Soccer Tournament

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Print & Digital Versions



WELCOME TO THE ★ ALL-STAR ★ SOCCER TOURNAMENT!

Walnut Hill is a small town with many families and lots of kids. Soccer is the most popular sport played in Walnut Hill. Most kids begin playing on the Pee-Wee League when they are in kindergarten. Once kids become second graders, they are promoted to the All-Star League. One of the most exciting things about being on the All-Star League is playing in the annual fall tournament that Walnut Hill hosts.

Hosting a soccer tournament is a great opportunity to encourage healthy lifestyle habits like staying fit. It also gives children an opportunity to support teammates, play fairly, and learn good sportsmanship skills. Most of all, it brings players together from different communities and provides an organized way for them to play hard and have fun.

The soccer leagues of Northfield, Elm City, and Oak Creek are invited to bring their teams to Walnut Hill to play in the tournament. There is a lot of competition between the four towns, and every coach makes sure that their teams are at their best to play soccer. Kids, coaches, and families always look forward to this fun filled weekend.

This year's tournament is scheduled for October 8th and 9th. Your father has organized the event this year with help from you and your family. You can't wait for the tournament to get started.



WELCOME TO THE ★ ALL-STAR ★ SOCCER TOURNAMENT!

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Interactive Movable Pieces



SATURDAY SOCCER TOURNAMENT GAME TIMES

Below is the time schedule for Saturday's games. Each game will be played in two 25-minute halves. There will be a five-minute break between halves.

TIME SLOT 1-8:30 AM **TIME SLOT 2-10:00 AM** **TIME SLOT 3-11:30 AM** **TIME SLOT 4-1:30 PM**

- You are on Walnut Hill-Team I. Your first game on Saturday began at 8:48 because the Northfield-Team I arrived late. What time did the game end? Solve using the number line. Drag the vertical lines to partition, the text boxes to label, and the half-circles to show your hops.
- Your team won the first game. Your next game is against Elm City-Team I. The match will be in the 3rd time slot. Considering the time your first game ended, how many minutes will you wait until your second game begins?
- The second game ends match with _____ and one 5-minute penalty kick shootout you win the _____ know.

SOCCER PRACTICE SKILLS AND DRILLS-LINE PLOT

Coach Franklin needs help plotting player's times running the 50-yard dash. The table below shows the best times his players ran the dash in seconds.

PLAYER	Mike	Tony	Fawn	KC	Eric	Jake	Maria	Ed	Cole	Lynne	Alex	Levi	Pedro
50-YARD DASH	7.75	8.5	8.25	9.25	8	7.5	9	9.25	10	9.5	8.75	7.25	8.75

- Write a title for the line plot in the box.
- Fill in the missing times across the bottom of the line plot.
- Drag an X above the numbers to show the running times of each player on Coach Franklin's team.
- List the 5 fastest runners and their times.

5th Grade Math Standards Aligned

FOR THE TEACHER

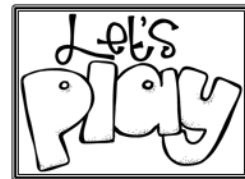
ALL-STAR SOCCER TOURNAMENT is a project-based learning task that involves using standards from *Numbers in Base Ten* and *Measurement and Data* to solve problems related to hosting a soccer tournament.

The following standards are addressed:

- 5.NBT.A.4 Use place value understanding to round decimals to any place.
- 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Find whole number quotients of whole numbers with up to four-digit dividends and two-digit divisor, using strategies based on place value, properties of operations, and/or relationship between multiplication and division.
- 5.NBT.B.7 Perform all operations with decimals to hundredths, using concrete models, drawings, and strategies based on place value, properties of operations, and/or the relationship between add./sub., relate to a written method and explain reasoning.
- 5.MD.A.1 Convert among different sized standard measurement units within a given measurement system. Use in solving multi-step real world problems.
- 5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions by using information presented in line plots.

DIRECTIONS:

1. Assign students to work alone or in small groups.
2. Preview the activity with your students.
3. Allow students class time to complete the activity. This can span over several days.
4. Students have an opportunity to complete optional challenge activities.
5. Students will complete the self-evaluation reflection and evaluation rubric.
6. Allow students an opportunity to share their completed projects with classmates.



Student Self-Assessment

ALL-STAR SOCCER TOURNAMENT

SELF REFLECTION: Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

Rate This Project

Circle the statement you most agree with.

I am ready for something harder.

It was just right.

I found this very challenging.

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SELF-EVALUATION RUBRIC Drag to circle the parts of the rubric that express how you rate yourself on this Project Based Learning Activity.

RUBRIC

+	✓	-
I feel very confident about my ability to complete the math in this project.	I feel pretty good about my ability to complete the math in this project.	I feel a lot of the math in this project was too hard for me to do alone.
I understood all the math and did not need help to complete the problems.	I understood most of the math but needed a little help to solve some of the problems.	I understood some of the math but needed help to solve most of the problems.
I easily used many strategies to solve the math problems efficiently.	I needed some help to determine the best strategies for solving the math problems.	I had trouble understanding the best strategies to solve many of the math problems.
I feel I am ready for a harder math project.	I feel I should spend more time practicing similar math problems.	I feel I need assistance to work on similar math problems.



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Standards Addressed

- 5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10
- 5.NBT.A.4 Use place value understanding to round decimals to any place.
- 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Find whole number quotients of whole numbers with up to four-digit dividends and two-digit divisor, using strategies based on place value, properties of operations, and/or relationship between multiplication and division.
- 5.NBT.B.7 Perform all operations with decimals to hundredths, using concrete models, drawings, and strategies based on place value, properties of operations, and/or the relationship between add./sub., relate to a written method and explain reasoning.
- 5.NF.B.4.B Multiply fractional side length to find areas of rectangles and represent fraction products as rectangular areas.
- 5.MD.A.1 Convert among different sized standard measurement units within a given measurement system. Use in solving multi-step real world problems.
- 5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions by using information presented in line plots.

Interactive Elements

Furnishing your bedroom

Version 3, page 3

Your parents have given you a budget of \$1,800 to furnish your bedroom. You must decide which pieces of furniture to purchase. There are options for your bed, desk and bureau. You must select one piece from each group. You must by either the bookcase or the rug. Review the furniture options, the measurements and the prices below. Drag the checkmark to the items you want to purchase.



beds



Bed option 1
3' wide by 6' long
\$255.50



Bed option 2
5' 6" wide by 6' long
\$364.99

desks



Desk option 1
3' 6" wide by 2' deep
\$198.25



Desk option 2
4' 6" wide by 18" deep
\$277.50



Desk option 3
4' wide by 15" deep
\$212.09

bureau



Bureau option 1
2' 6" wide by 2' deep
\$265.97



Bureau option 2
5' 6" wide by 18" deep
\$310.75



Bureau option 3
3' 6" wide by 30" deep
\$295.01

bookcase



3' wide by 2' deep
\$185.32

rug



8' 6" wide by 10' long
\$225.84

© Julie Baker

Challenge Activities

Buying wall-to-wall carpeting - Challenge I

Your grandmother said she will give money to purchase new wall-to-wall carpeting. Your task is to read the table below and calculate how much it will cost for each type of carpeting. This will help you decide which carpeting you will purchase for your bedroom.

1. Calculate the area of your bedroom floor including the closet. How many square feet of carpeting do you need to cover the floor? Show with an equation.

Type of carpeting	Berber	Loop	Plush	Textured
Cost per square foot	\$3.49	\$4.97	\$5.99	\$6.75
Total cost to carpet bedroom				

2. Use an area model to show your calculation for the cost of one type of carpeting.



3. The carpet store is offering a 10% discount if you order today by 5:00 p.m. Calculate how much you will save to the nearest hundredth for each type of carpet. Show how you solved.

Berber	Loop	Plush	Textured



© Julie Becker

Applicable to Real Life & Fun!

Accessorizing

Version 3, page 11

Consider the amount of money you have left to spend on accessories. Below are some accessories you can purchase for your room. Review the options and pick out your favorites. Drag a checkmark to the items you would like to include in your plan. On the next page you will list your choices and calculate the costs.



Cork Board
\$47.95



Wall Clock
\$12.25



Cactus
\$4.78



Teddy Bear
\$7.33



Model Rocket
\$25.89



Table Lamp
\$31.45



Desk Lamp
\$24.29



Guitar
\$59.25



Computer
\$425.98



Art Tools
\$19.64



Wall Art
\$67.19

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ICE CREAM TRUCK MANIA

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ICE CREAM SUPPLY

You receive a large shipment from your ice cream supplier to stock your truck. The table below shows how many of each ice cream type you have right now. Use the information in the table to answer the questions.

Ice cream type	Chocolate sprinkle cone	Blue raspberry popsicle	Soft serve swirl cone	Pistachio cone	Patriotic Pop
Number in truck	585	490	320	256	168

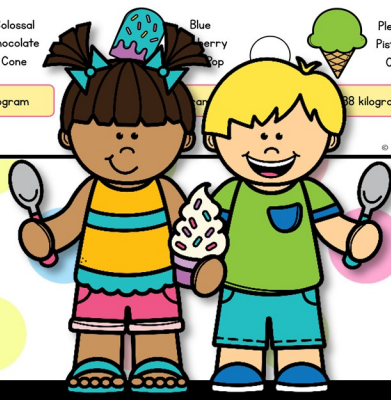
- You sell 26 soft serve swirl cones per day. You sell 10 pistachio cones per day. In how many days will you have the same amount of soft serve swirl cones left as pistachio cones?
- You split the chocolate sprinkle cones and the blue raspberry popsicles evenly between 5 freezers in your truck. How many ice creams are in each freezer?
- In one day, you sold 14 blue raspberry popsicles. You sold 8 times as many Patriotic Pops as pistachio cones. How many Patriotic Pops do you have left?
- The chocolate sprinkle cones are your bestseller. Over the course of one year, you order 14 times as many chocolate sprinkle cones as you have now. How many do you order in total?



MEASURING ICE CREAM

As a special promotion, you are selling mega-sized ice creams from your ice cream truck. Compare the masses of mega ice creams by filling in the correct symbol (<, >, or =) in each comparison below.

 Supersized Strawberry Sprinkle Pop 0.852 kilogram	 Extra Large Lemon Cone 0.725 kilogram	 Mega Mint Swirl 0.637 kilogram	 Giant Popsicle 0.662 kilogram
 Jumbo Double Lime Pop 0.7 kilogram	 Rainbow Mountain Stack 0.700 kilogram	 Big Blueberry Pie Cone 0.605 kilogram	 Towering Tropical Fruit Popsicle 0.550 kilogram
 Super Sprinkle Vanilla Cone 0.482 kilogram	 Colossal Chocolate Cone 0.549 kilogram	 Blue Raspberry Pop 0.588 kilogram	 Plentiful Pistachio Cone 0.588 kilogram



Standards Addressed:

- 5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.NBT.A.3.B Compare two decimals to thousandths based on meanings of the digits in each place.
- 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
- 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 5.NF.B.6 Solve real world problems involving multiplication of fractions and mixed numbers.
- 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system.
- 5.MB.B.2 Make a line plot to display a data set of measurements in fractions of a unit.

Print & Digital Versions



ICE CREAM SUPPLY

Your first step is to determine how many of each menu item you have in the freezer of your ice cream truck. You are given an equation for each frozen treat. Use order of operations to solve and find the quantity you have of that frozen treat.



$$7 \times (32 - 25) = \underline{\hspace{2cm}}$$



$$[(8 + 1) - 3] \times 5 = \underline{\hspace{2cm}}$$



$$(5 + 3) \times (9 - 3) = \underline{\hspace{2cm}}$$



$$\{4 + [2 \times (6 - 1)]\} = \underline{\hspace{2cm}}$$



$$18 + [(3 \times 2) \times (9 + 1)] = \underline{\hspace{2cm}}$$



$$(24 + 12) + (4 \times 4) - (2 \times 3) = \underline{\hspace{2cm}}$$



$$\{3 \times [2 + (8 \times 3)]\} + 5 = \underline{\hspace{2cm}}$$



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$$\{3 \times [2 + (8 \times 3)]\} + 5 = \underline{\hspace{2cm}}$$



$$[(5 \times 6) - (7 \times 2)] + (6 \times 8) = \underline{\hspace{2cm}}$$

Explores Various Standards-Based Skills



ICE CREAM SUPPLY

You receive a large shipment from your ice cream supplier to stock your truck. The table below shows how many of each ice cream type you have right now. Use the information in the table to answer the questions.

Ice Cream Type	Chocolate sprinkle cone	Blue raspberry popsicle	Soft serve swirl cone	Pistachio cone	Patriotic pop
Number in Truck	585	490	320	256	168

1. You sell 26 soft serve swirl cones per day. You sell 10 pistachio cones per day. In how many days will you have the same amount of soft serve swirl cones left as pistachio cones?
2. You split the chocolate sprinkle cones and the blue raspberry popsicles evenly between 5 freezers in your truck. How many ice creams are in each freezer?
3. In one day, you sold 14 blue raspberry popsicles. You sold 8 times as many patriotic pops as blue raspberry popsicles. How many patriotic pops do you have left?
4. The chocolate sprinkle cones are your bestseller. Over order 16 times as many chocolate sprinkle cones as in order in total?



MEASURING ICE CREAM

The table below shows the mass in grams of some of the frozen treats you sell from your ice cream truck. Use the information to answer the questions below.

Ice Cream Type	Chocolate sprinkle cone	Blue raspberry popsicle	Soft serve swirl cone	Pistachio cone	Patriotic pop
Mass (in grams)	390	124	486	335	80

1. Mr. Petrakis buys a chocolate sprinkle cone, a blue raspberry popsicle, and a soft serve swirl cone. What is the total mass of the ice creams in grams? What is the total mass of the ice creams in kilograms?
2. The patriotic pops come in boxes that weigh 5.2 kilograms. How many patriotic pops come in one box?
3. Emilio buys two ice creams. The total mass of his ice creams is more than $\frac{1}{2}$ of a kilogram but less than $\frac{3}{5}$ of a kilogram. Which two ice creams could Emilio have purchased?
4. Charlotte buys a soft serve swirl cone. She eats $\frac{2}{3}$ of it but gets full and gives the rest to her sister Ariel. Ariel eats 92 grams but then drops the rest on the ground by accident. How many grams of ice cream fell to the ground when Ariel dropped it?



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Student Self-Assessment

SELF EVALUATION

Circle one box per row on the rubric that expresses how you rate yourself on this Project Based Learning Activity.

+	✓	-
I felt very confident about the math in this project.	I felt pretty good about my ability to complete the math in this project.	I felt a lot of the math in this project was too hard for me to do alone.
I understood all of the math and did not need help to complete the problems.	I understand most of the math but needed a little help to solve some of the problems.	I understood some of the math but needed help to complete most of the problems.
I easily used many strategies to solve the math problems efficiently.	I needed some help to use the best strategies for solving the math problems.	I had trouble understanding the best way to solve many of the math problems.
I feel I am ready for a harder math project	I feel I would like to	I feel I need assistance to work on similar math problems

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SELF-REFLECTION

Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

✓ RATE THIS PROJECT

Drag the checkmark to the statement you most agree with.

I am ready for something harder.

This was just right.

I found this very challenging.

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