4th Grade Math

Books and Supplies: Saxon Math Intermediate 4 (Student Edition) and Power Up Workbook. Optional: Saxon Math Intermediate 4 Written Practice Workbook. With each lesson, ask your child to complete the Power Up section before moving on to the New Concept and Written Practice.

A Note about Standards: While I normally include standards covered with each lesson, I simply don't have the space to do so in math. I have constructed math lessons with two things in mind. First, to cover every standard. If you finish the math program you will have covered all of Utah 3nd Grade Core Standards for math. I have added supplemental lessons (below) to ensure those standards that Saxon doesn't include are covered. Secondly, I've taken into account the layout of the Saxon program. The book does not teach the lessons in units. It does, however, build upon each lesson using what was learned in previous lessons. Rather than organizing units, I've decided to follow the Saxon program to ensure that the review portion of the lessons is covered before expecting your child to do it in the workbook. The lessons that are skipped in the Saxon book are ones that do not specifically meet standards for Utah 3nd Grade. This does not mean that you have to skip them. You may want to use them as a part of a "review day" lesson.

Saxon Math Program: Each Saxon lesson includes instruction, examples with solutions, practice, and problem sets. Review the instruction and example with your child as needed for each lesson. Then, ask your child to work through the problem set on their own, correcting it and providing additional instruction as needed.

Review Days: Every so often your child will have a Math Review Day. Take time on this day to review a lesson or concept that your child hasn't fully grasped. Cover a lesson again, find a math game that can teach it, work on flash cards and math fact mastery, or let your child choose one of their favorite worksheets to do again. If your child has mastered everything, do one of the skipped lessons, read and prepare a fun recipe, play a card or board game (most of them have a math element), or take the day off from math.

Prodigy: Prodigy is a great review for math concepts throughout elementary. It's a fun game that really has helped my visual learner to make connections because it motivates him to get the right answer. You can sign up with a free account here (https://sso.prodigygame.com/game/start?rid=e5186a1d-5420-4a2a-9a36-4a29ec60352f)

Flash Cards: Use flash cards and/or a multiplication machine (like this one) to help your child memorize all products of two one-digit numbers. These should be practiced every day until your child masters them all. Include division problems with the same numbers.

Supplemental Lessons:

Lesson 1: Halloween

Purchase and download the worksheet packet here (or find a substitute) and ask your child to complete one or two.

Lesson 2: Christmas

Purchase and download the worksheet packet here (or find a substitute) and ask your child to complete one or two.

Lesson 3: Valentine's Day

Purchase and download the worksheet packet here (or find a substitute) and ask your child to complete one or two.

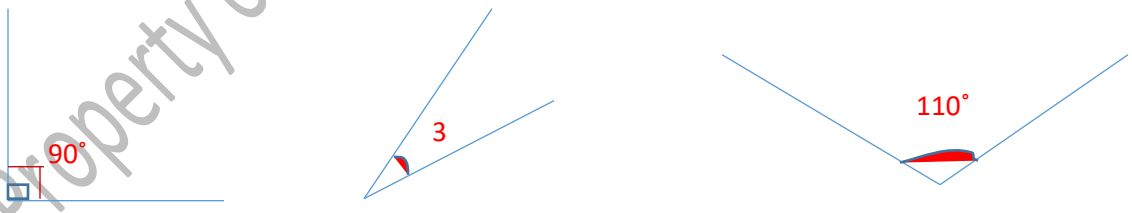
Lesson 4: Using a Protractor to Measure Angles

*You will need a protractor and the worksheet below for this lesson

Show your child the protractor and tell him/her the name of this tool. Ask them to point out things they notice about it. Then, explain that a protractor is like a ruler. It shows numbers and measures things. However, instead of measuring straight lines, a protractor measures angles. Angles are measured in degrees.

Remind your child of what they've learned so far about angles (2 rays meeting in a vertex, right, obtuse, and acute angles). Show them the examples below of each type of angle and ask them to correctly label them (right, acute, obtuse):

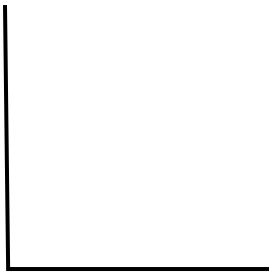
Next, demonstrate how to measure each angle with a protractor using the angles above. Place the opening at the bottom middle of the protractor over the vertex. Then, keeping the opening on the vertex, twist the protractor until the line at the bottom lines up exactly with one ray of the angel. Then, read the number that the second ray goes through on the protractor. If you are using the line to the right of the center, this will be the number on the bottom. If you are using the left side, it will be the number on top. This is the degrees measurement of the angle. For more information, see the video here. To label the degree measurement, you draw a curved line with an arrow on one end inside the angle. Then, you write the number and the degrees sign (˚). See below for examples. Point out that right angles always are 90˚. Acute angles are always less than 90˚. Obtuse angels are always more than 90˚.



Finally, ask your child to complete the worksheet for this lesson.

Lesson 4 Worksheet

Use a protractor to measure and label the degrees of each angle below. Then, label each angle as either right, acute, or obtuse.



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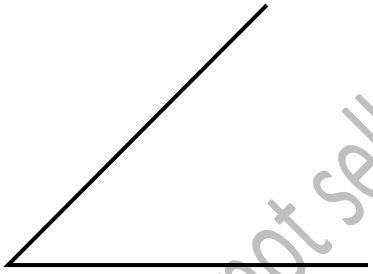

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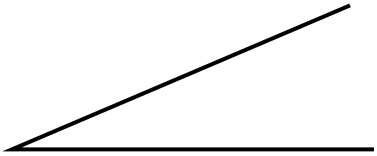

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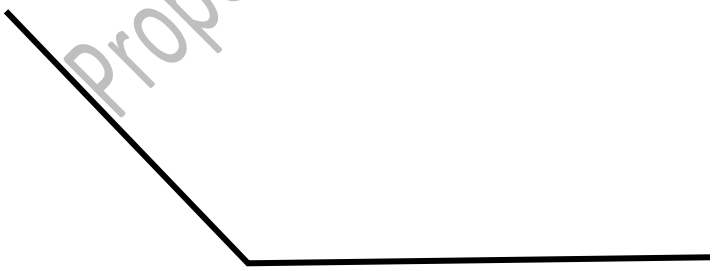

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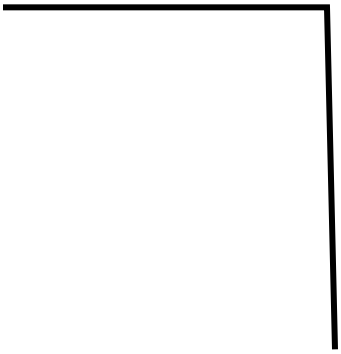

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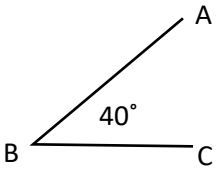
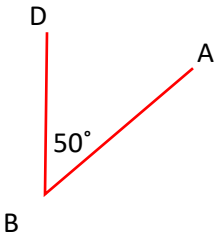
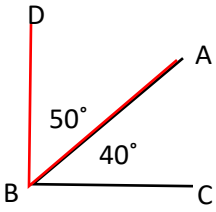
Lesson 5: Adding and Subtracting Angles

Review the previous lesson with your child. Ask them to remind you what they've learned about measuring angles. Then, explain that, like numbers of shapes, two small angles can be put together to create a larger angle. We do this by adding the degrees measurements of both angles together, as in the example below.



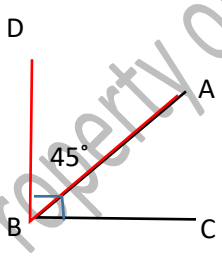


Point out that angle ABC is 40˚ and angle DBA is 50˚. If we want to add these angles together to create one large angle, we would simply add the degrees together using the following formula: ABC + DBA = _____



Since 40 + 50 = 90, the degree measurement of the new, larger angle would be 90˚

Likewise, we can take a large angle and break it into smaller parts by subtracting, as in the example below. We can use this idea to find a missing angle measurement if we know the measurement of the larger angle and one of the smaller ones.

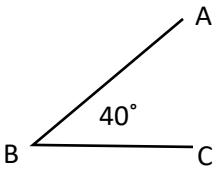


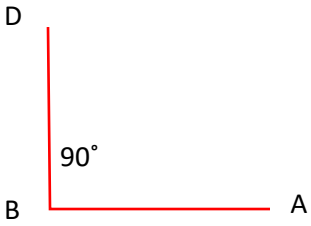
Point out that the little square in the corner tells us that this is a right angle, which has to equal 90˚. The measure of angle ABD = 45˚. If we want to find angle ABC, we simple subtract using this formula: 90˚-ABD = _____ or 90˚ - 45˚ = 45˚. We now know that the measure of ABC is 45˚.

Watch this video here with your child to learn more and practice with a few more examples. Then, ask your child to complete the worksheet for this lesson.

Lesson 5 Worksheet (2 pages)

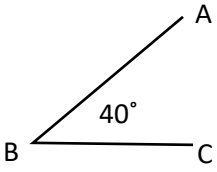
Use the following angles to compose a larger angle. What would the measurement of angle DBC be?

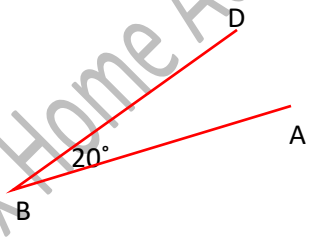




ABC + DBA = DBC _____

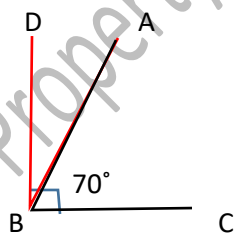
Use the following angles to compose a larger angle. What would the measurement of angle DBC be?



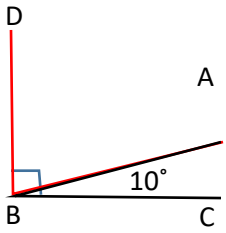


ABC + DBA = DBC _____

Decompose the larger, right angle to find the missing angle measurement



90˚- ABC = DBC _____



90˚- ABC = DBC _____

A man is using triangle tiles to cover a floor. The corner, which is exactly 90˚, has one tile placed that is 45˚. What should the measurement of the second tile be to fill the space? Draw a picture of the problem to help you solve it

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An open book lays flat at an angle of 180˚. If it is only open 50˚, how much more do I need to open the book in order to read it? Draw a picture of the problem to help you solve it

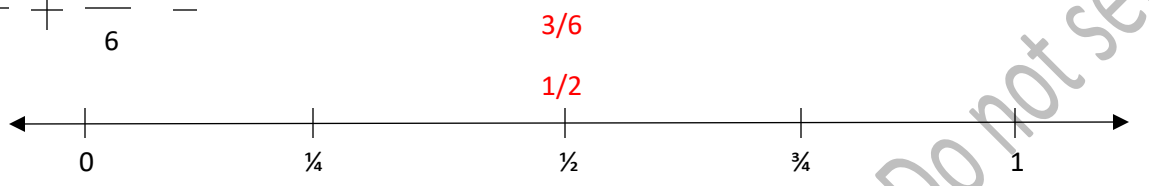
Lesson 6: St. Patrick's Day

Purchase and download the worksheet packet here (or find a substitute) and ask your child to complete one or two.

Lesson 7: Equivalent Fractions (10's and 100's)

Review with your child what they've learned about equivalent fractions. Point out that fractions may have different numbers in the numerator and denominator but belong at the same point on the number line. These fractions can be reduced or increased to match others in mathematical problems (to add or subtract them) as in the example below:

$$\frac{1}{2} + \frac{3}{6} =$$



Ask your child to color in ½ of the first circle and 3/6 of the second. Point out that both of these fractions color in ½ of the circle and are equivalent. This means that they are on the same point as the number line. To change ½ to 3/6, we simply multiply ½ by 1 (anything multiplied by one is still itself). However, 1 is in the form of a fraction: 3/3

$$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$$

Point out that any fraction with a numerator and a denominator that match is equal to 1 (3 divided by 3 equals 1) and that multiplying anything by 1 is itself. This means that ½ and 3/6 are equivalent.

Likewise, we can use multiples of 10s to change fractions with a denominator of 10 to one with a denominator of 100. By simply multiplying the fraction by 1 in the form of 10/10, we change bot numbers. See the example below:

$$\frac{3}{10} \times \frac{10}{10} = \frac{30}{100}$$

Point out that, because we are multiplying by ten, we simply add a zero to the numerator and the denominator. Practice with the example below, asking your child to convert the fraction to an equivalent one with a denominator of 100

$$\frac{6}{10} \times \frac{10}{10} = \frac{\square}{100}$$

Next, point out that this also works in reverse. If we have a denominator of 100 and a numerator ending in 0, and want to change the denominator to a 10, we can simple divide the fraction by 10, dropping a zero from both the numerator and the denominator. Show your child the following examples, ask them to complete the last one, then ask them to complete the worksheet for this lesson.

$$\frac{60}{100} = \frac{6}{10}$$

$$\frac{30}{100} = \frac{3}{10}$$

$$\frac{10}{100} = \frac{1}{10}$$

$$\frac{90}{100} = \frac{9}{10}$$

$$\frac{50}{100} = \frac{\square}{10}$$

Lesson 7 Worksheet

Convert the following fractions into equivalent fractions containing the denominator 100

$\frac{5}{10} = \frac{\quad}{100}$ $\frac{3}{10} = \frac{\quad}{100}$ $\frac{9}{10} = \frac{\quad}{100}$

$\frac{6}{10} = \frac{\quad}{100}$ $\frac{7}{10} = \frac{\quad}{100}$ $\frac{1}{10} = \frac{\quad}{100}$

$\frac{4}{10} = \frac{\quad}{100}$ $\frac{8}{10} = \frac{\quad}{100}$ $\frac{2}{10} = \frac{\quad}{100}$

Convert the following fractions into equivalent fractions containing the denominator 10.

$\frac{50}{100} = \frac{\quad}{10}$ $\frac{30}{100} = \frac{\quad}{10}$ $\frac{90}{100} = \frac{\quad}{10}$

$\frac{60}{100} = \frac{\quad}{10}$ $\frac{70}{100} = \frac{\quad}{10}$ $\frac{10}{100} = \frac{\quad}{10}$

$\frac{40}{100} = \frac{\quad}{10}$ $\frac{80}{100} = \frac{\quad}{10}$ $\frac{20}{100} = \frac{\quad}{10}$

Lesson 8: Multiplying Fractions by Whole Numbers

Ask your child to review with you what they've learned about multiplying fractions by completing the examples below:

$\frac{1}{5} \times \frac{3}{2} =$ $\frac{2}{6} \times \frac{4}{6} =$ $\frac{5}{7} \times \frac{8}{9} =$ $\frac{7}{8} \times \frac{3}{4} =$

Next, remind your child that any fraction with a numerator that matches the denominator is equal to one. Multiplying a fraction by a second fraction that has matching numerators and denominators is the same as multiplying it by 1. Ask your child to complete the examples below.

$\frac{5}{5} \times \frac{3}{2} =$ $\frac{6}{6} \times \frac{4}{6} =$ $\frac{7}{7} \times \frac{8}{9} =$ $\frac{8}{8} \times \frac{3}{4} =$

Then, explain that a fraction with a denominator of one is equivalent to the numerator as a whole number because any number divided by itself is equal to itself. Ask your child to solve the following:

$\frac{5}{1} = 5 \div 1 =$ $\frac{2}{1} = 2 \div 1 =$ $\frac{7}{1} = 7 \div 1 =$ $\frac{10}{1} = 10 \div 1 =$

Finally, explain that whole numbers can be multiplied by fractions by adding a denominator of 1 to the bottom of the whole number and then multiplying as you would any other fraction. For example:

$3 \times \frac{2}{5} = \frac{3}{1} \times \frac{2}{5} =$

Since 3 x 2 = 6 and 1 x 5 = 5, the answer to this equation would be $\frac{6}{5}$

Review the following examples with your child, encouraging them to add a denominator of 1 to the bottom of the whole numbers and multiply the fractions. Then ask them to complete the worksheet for this lesson.

$5 \times \frac{3}{2} =$ $6 \times \frac{4}{6} =$ $7 \times \frac{8}{9} =$ $8 \times \frac{3}{4} =$

Lesson 8 Worksheet

Multiply the whole numbers to the fractions by adding a denominator of 1 to the whole numbers

$1 \times \frac{1}{2} =$	$8 \times \frac{2}{3} =$	$5 \times \frac{1}{4} =$	$9 \times \frac{1}{5} =$
$3 \times \frac{3}{2} =$	$6 \times \frac{5}{6} =$	$7 \times \frac{8}{9} =$	$2 \times \frac{3}{4} =$
$4 \times \frac{4}{8} =$	$10 \times \frac{4}{6} =$	$3 \times \frac{7}{8} =$	$5 \times \frac{2}{5} =$
$9 \times \frac{1}{2} =$	$2 \times \frac{2}{3} =$	$1 \times \frac{5}{6} =$	$7 \times \frac{6}{10} =$
$4 \times \frac{2}{5} =$	$8 \times \frac{3}{4} =$	$5 \times \frac{1}{3} =$	$0 \times \frac{3}{8} =$
$3 \times \frac{4}{5} =$	$6 \times \frac{6}{7} =$	$7 \times \frac{8}{10} =$	$3 \times \frac{2}{4} =$

Lesson 9: Fractional Line Plots

Briefly review addition and subtraction of fractions with your child using the following examples:

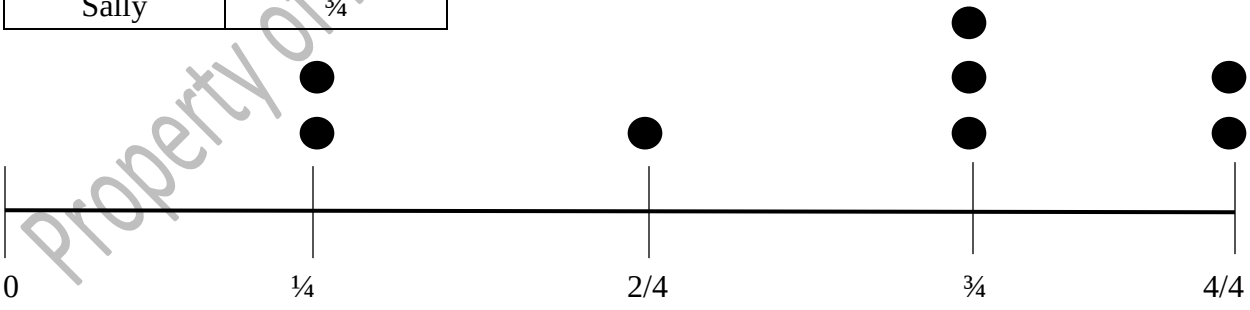
$\frac{5}{2} + \frac{3}{2} =$ $\frac{6}{6} + \frac{4}{6} =$ $\frac{7}{9} + \frac{8}{9} =$ $\frac{8}{4} + \frac{3}{4} =$

$\frac{10}{2} - \frac{4}{2} =$ $\frac{8}{6} - \frac{3}{6} =$ $\frac{6}{9} - \frac{1}{9} =$ $\frac{9}{4} - \frac{7}{4} =$

Then, explain that we can use this to learn more from data tables and graphs. Use the following example problem to create a line plot (example below) with your child on a blank paper. Then, ask them to answer the questions below using the information on the line plot.

The chart below shows how much homework each child had finished before 5pm. Use this chart to create a line plot, then answer the questions below. Then, ask your child to complete the worksheet for this lesson.

Name	How Much
Holly	3/4
Matt	1/4
David	4/4
Jessica	2/4
Richard	4/4
Maria	3/4
Tom	¼
Sally	¾



What is the most common amount of work done by 5pm? _____

What is the least common amount of work done by 5pm? _____

How much more work does David have done than Matt? _____

Lesson 9 Worksheet (2 pages)

Each child was given a bag of candy. The chart below shows how much of their candy each child has eaten. Use this chart to create a line plot, then answer the questions below.

Name	How Much
Rachel	1/2
Marcus	2/2
Brayden	2/2
May	0/2
Dean	1/2
Shelly	2/2
Caleb	2/2
Emma	1/2

Name one of the children who has eaten all of their candy. _____

Who has the most candy left? _____

How much more candy did Caleb eat than May? _____

How much candy does Dean have left? _____

Name two children who ate the same amount of candy. _____

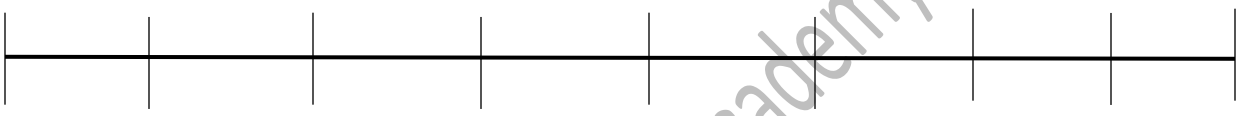
How much candy does Brayden have left? _____

If Emma and Rachel put their remaining candy together, how many servings will they have?

_____

The chart below shows how much pie of each pie is left over after Thanksgiving dinner. Use this chart to create a line plot, then answer the questions below. Then, ask your child to complete the worksheet for this lesson.

Name	How Much
Cherry	3/8
Lemon	1/8
Pumpkin	4/8
Pecan	2/8
Peach	1/8
Apple	1/8
Strawberry	5/8
Rhubarb Pie	5/8



Which types of pie have the most leftovers? _____

Which types of pie were the most popular? _____

How much more pumpkin pie is left over compared to the peach pie? _____

Which amount of pie was leftover the most often? _____

Which amount of pie was leftover least often? _____

If I placed the remainder of the lemon pie in the cherry pie pan, how much of the pan would still be empty? _____

What kind of pie would you like to try most? _____