

Interactive Math Notebook

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FIRST GRADE COMMON CORE MATH STANDARDS

Operations & Algebraic Thinking

Represent and Solve Problems Involving Addition and Subtraction

1.0A.I

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.

I.OA.2

Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20 {e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem}.

Understand and Apply Properties of Operations and the Relationship Between Addition and Subtraction

1.0A.3

Apply properties of operations as strategies to add and subtract {e.g., If 8+3=ll is known, then 3+8=ll is also known. To add 2+6+4, the second two numbers can be added to make a ten, so 2+6+4=2+10=12}.

1.0A.4

Understand subtraction as an unknown addend problem. For example, subtract 10-8 by finding the number that makes 10 when added to 8. Add and subtract within 20.

Add and Subtract Within 20

1.0A.5

Relate counting to addition and subtraction {e.g., by counting on 2 to add 2}.

I.OA.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten {e.g., 8+6=8+2+4=10+4=14: decomposing a number leading to a ten {e.g., 13-4=13-3-1=10-1=9}: using the relationship between addition and subtraction {e.g., knowing that 8+4=12, one knows 12-8=4}: and creating equivalent but easier or known sums {e.g., adding 6+7 by creating the known equivalent 6+6+1=12+1=13}.

1.0A.7

Work With Addition and Subtraction Equations

Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

I.OA.8

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8+?=11, 5=__-3, 6+6=___.



FIRST GRADE COMMON CORE MATH STANDARDS Numbers & Operations in Base Ten

Extend the Counting Sequence

I.NBT.I

Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

I.NBT.2

Understand Place Value

Understand that the two digits of a two digit number represent amounts of tens and ones.

I.NBT.2(a)

10 can be thought of as a bundle of tens and ones- called a "ten".

I.NBT.2(b)

The numbers from II to 19 are composed of a ten and a one, two, three, four, five, six, seven, eight, or nine ones.

I.NBT.2(c)

The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two three, four, five, six, seven, eight, or nine tens {and 0 ones}.

I.NBT.3

Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >,=, and <.

Use Place Value Understanding and Properties of Operations to Add and Subtract

I.NBT.4

Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

I.NBT.5

Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

I.NBT.6

Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 {positive or zero differences}, using concrete models of drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction: relate the strategy to a written method and explain the reasoning used.

FIRST GRADE COMMON CORE MATH STANDARDS

Measurement & Data

Measure Lengths Indirectly and by Iterating Length Units

I.MD.I

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

I.MD.2

Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object {the length unit} end to end; understand the the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

Tell and Write Time

 $\Delta M M$

Tell and write time in hours and half-hours using analog and digital clocks.

Represent and Interpret Data

I.MD.4

I.MD.3

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry

Reason with Shapes and their Attributes

I.G.I

Distinguish between defining attributes {e.g., triangles are closed and three-sided} versus non-defining attributes {e.g., color, orientation, overall size}; build and draw shapes to possess defining attributes.

I.G.2

Compose two-dimensional shapes {rectangles, squares, trapezoids, triangles, half-circles, and quartercircles} or three dimensional shapes {cubes, right rectangular prisms, right circular cones, and right circular cylinders} to create a composite shape, and compose new shapes from the composite shape.

I.G.3

Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Introduction

This interactive math notebook and problem solving journal is a place where students record their thinking process and will hold a chronological record of the student's mathematical thinking over the year. It is a tangible, authentic tool students can continually refer to. Using an interactive notebook allows students to think through a concept and make it their own. Each entry is a hands-on learning activity that will help solidify each math standard.

This notebook will allow students to... journal their strategy and thought processes reflect on their math learning express what they are learning organize and document their work develop common core math standards, concepts and understandings

I use this notebook in small groups. It gives me more opportunities to discuss the students' thoughts and understanding of each concept. In the beginning, they will require more assistance. As they become more familiar with folding and glueing, the process of putting together each entry will be easier. The same is true for recording their thought process for solving problems. With time and guidance, this is also a skill that will become easier.

Interactive MATH Notebook

Examples and Directions



Cut out the rectangular problem. Fold in half and cut along the line. Example shown to the right.

Color flowers before cutting and glueing. There will be one left over to be thrown out.

Complete the answers in the foldable prior to glueing into the notebook.









Cut out the gumball machine and color. Fold and lightly glue in the rectangles that are labeled. Fold to create a pocket.

Color and cut out gumballs. Students can keep the gumballs in the pocket or can glue and cross out to match the subtraction problem.



Cut out the rectangular problem. Fold in half and cut along the line. Glue into journal.

Next, place the two pages in the inside of the "notepad".







Cut out and fold the flip flop. Glue in the labeled areas. This envelope will hold the ten numbers.

If you choose to have the students color the numbers, it is easier to do so before cutting.

Cut and glue the number sentence frame. Glue into notebook.

Glue the subtraction symbol above the addition symbol.

Use the numbers to make related addition and subtraction problems.





Cut out the cake and make the two folds to hide the pages within.

I keep the candles together, but they can be cut to use as counters.

I color the candles as a way to solve the problem.

Writing the subtraction problem shows the relationship it has with the addition problem and another way to solve the missing addend.







Cut out the shape and make the two folds.

Write I, 2, and 3 in the boxes and then cut along the lines.

When there is a missing addend, I have the students place the given addend in their head and then count up to the answer.









Cut out the house and fold along the line to cover the house.

Choose 3 numbers you want the students to use in their number family. Write them on the front <u>before</u> you cut the flaps.

Cut the flaps. Write the four number sentences in the addition and subtraction family.



Cut out the rectangles and fold along the line.

Draw an arrow to show which way the students will be traveling on the number line to help solve the addition and subtraction problems.







Adding Vp to 10 Ways to Make 10 2+8=10 3 + 7 = 10 4+6=10 + 5 = 10

Cut out the shape and fold the flap over.

Color the caterpillar to show five different ways to make 10 <u>before</u> you cut the flaps.

Write the five number sentences in the spaces under each caterpillar.





Cut out and fold the pocket. Glue in the labeled areas. This pocket will hold the "pencils".

Write related number sentences on each pencil.

Depending on the student's level, you can either provide them with 3 numbers and they need to figure out the correct number sentence order or they can create their own problems.



Is the Number Sentence True Sh False? +3 - 4 = 6 7 + 7 = 14 12 = 12

Cut out and fold the flower pots. Glue in the labeled areas. This pot will hold the "flowers".

Place each flower in the correct pot.

Common Finding Unknow Core I.OA.8 Numbers Boing! Boing! Boing! Boing 5 6 7 8 Hop Forward 12 + 2 = 14 6+ 5 = 11 10 - 2 = 8 9 + 6 = 15 8 - 2 = 6 5+ 8 = 13 14-7=7 15 + () = 15 = 5 ©TeamKonechy2013



Cut out and glue the rectangles in the notebook.

Cut out the pencil topper and color. Fold in half vertically. There are two small black dashes. Cut on those two lines.

Place on pencil and hop up and down the number line.

Paperclip the pencil topper to the page, so it is not easily lost.





Cut out and glue the race track in the notebook.

Complete the 120 chart. This can be the same lesson or a different lesson depending on your time allotted.

Cut out the cones and glue them into place.

Count the dots and write the corresponding number on the back of the cone. If there is a number, draw the correct amount of dots to match the corresponding number.


Cut out and fold the rectangle. Cut to make the flaps before it is glued into the notebook.

Label the two columns as tens and ones.

Cut out the base ten blocks and glue them in the space that matches the number on the front of the flap.

On the inside, students count the blocks and write the amount.







Cut out and fold the photos. Glue the photos into the notebook.

Count the base ten blocks and write the number underneath the photo.

If the photo shows a number, draw the base ten blocks that represent this number underneath the photo.





Cut out and glue the bottom portion of the foldable in the notebook.

Cut the foldable flaps with the chocolate base ten blocks on them. Glue down in the labeled area.

Under each flap, write how many tens and ones.



Cut out the little pig's house and glue into the notebook.

There are two foldables. First, fold little pig's door like an accordion and glue in the doorway. Count how many tens it take to build his home.





Second, fold the other rectangle along the line. Count the stacks of tens. On the inside write how many tens it is and what that equals.





Cut out and glue the lake into your notebook.

If you choose to color the greater than, less than signs, do so prior to cutting. Cut out the signs.

Glue the greater than, less than symbols so that they are "eating" the larger number. The word clues will also help them choose the right answer.





Cut out and glue the soldier to the right side of the notebook.

Cut the USA foldables.

Give them a number sentence to write in each problem. Make sure they line up their numbers in a row (straight as a soldier).

Accordion fold each letter.

Ten More, Ten Less Common Core I.NBT.5 ten more ten less one more one less 9, 19 2,12 5,6 2,3 38, 48 16, 17 21, 22 12, 24 54,64 20,30 47,48 34.35 67,____ . 43 59, ____ _, 52 80, ____ ,71 73, ____ ______, 65 ©TeamKonechy2013

Cut out and glue the ten more, ten less problems on the bottom of the notebook. Cut out and glue the IOOs chart on the left page. When the notebook is open, you should be able to see both sheets.



Cut out the box that is shown above. Fold in half along the dotted line. Then cut out along the inside line. It should look like a plus sign when opened up. Students use this on the hundreds chart to help them find the answers.

I made an envelope to keep the box in. You can find this at the end of this packet. You can also just paperclip it to the page.





Cut out and glue the subtraction problems in the notebook.

Cut out and the sun.

Label the sun beams by counting by tens.

Fold on the line and glue into the notebook.

In the pictures shown, I traced the beams and colored them in. ©TreamKonechy2013





Cut out and fold the mugs making a pocket. Glue the mug along the labeled area. Glue into the notebook.

Place the "shorter" and "longer" label underneath each mug.

Color the scissors, pencils, and crayons. Cut out the shapes and compare.

Place the measured school supplies in the correct mug.





Cut out and fold the rectangle with the worm, pencil, etc. on it. Fold along the left line only. Glue into the notebook.

Cut out the toolbox and fold along the lines. Glue in the labeled areas. The opening should be on the right side of the box.

Cut out the counting bears and paperclips. They can be folded and kept in the toolbox after the student is done measuring with them.





Cut out and fold little clocks on the line, so that the words are covered. Glue them into place.

Cut out digital clocks and glue them on the matching clocks.

Write the written time in word form underneath.

On the opposite page, cut out the clock. Use a tab to pop through the clock and the arrows so that they rotate. If the arrows are copied onto thicker paper, they are more easily moved. I have also used a large and small paperclip to act as the hands.





Cut out and fold the graphs along the line. Label the three types of graphs... bar graph, tally chart, and picture graph. Glue into the notebook.

Answer questions on the side.





Cut out the foldable. Fold along the lines so that the points touch toward the center making a square. Glue into notebook.

Cut and glue label "How many sides does each shape have?" on the inside of the foldable.

Write the corresponding number to match it's shape on the opposite side.





Cut out the large rectangle with the shapes on it.

Glue small white rectangles over the labeled area in the 3-D column.

Illustrate the 2-D and 3-D shapes on the front. Behind the foldable draw and real life shape in 3-D form.

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Glue into notebook.
©TeamKonechy2013
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Cut out the two chefs. Fold along the "arms" and "legs". You will make one cut up the center of the legs.

Glue the chefs into place.

Illustrate the fractions for both the circle and square.





Cut out the top and bottom of the iPad.

Glue the labeled area and place the top of the iPad onto the bottom .

Write (illustrate) what it is that was learned in math that year.

```
Glue into notebook.
©TeamKonechy2013
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Interactive MATH Journal

Examples

I include these journal prompts on the opposite page of the interactive journal foldable for the same Common Core concept. It's a place for student's to "think on paper". Don't just give the answer. Show me what you were thinking to get to that answer.










Journal Prompts





Journal Prompts







Journal Prompts





I like to make my own journals. This is made with two 8 I/2 x II aqua construction paper. To make it sturdier, the red construction paper is wrapped around the spine of the journal. I place 35 pieces of white copy paper inside. I like using blank paper because it allows students to not be confined by the lines. Often notebooks have lines so close together and generally designed for older students. You would need to use a stapler designed for a large quantity of paper.





Interactive MATH Notebook Master Foldables and Prompts



I.OA.

Addition Word





I.OA.I

Subtraction Word Problem









How can you find the answer?















I.OA.4





Subtraction Gount Down	Count Down 10 9 8 7 6 5 4 3 2 1 3 2 1 0	5 - <u>2</u> 10 - <u>4</u>	Gounting with Subtraction
Add UP the Laps!	Add it UP! 10 9 8 7 6 5 4 3 2 1 0	3 <u>+ 2</u> 6 <u>+ 4</u>	Counting with Addition



1.0A.6

I.OA.6









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I 4 + 3 = I7	S S S	3 = 6	£ C C C C C C
II = 6 + 5	Solution of the second se	7 + 7 = 14	ک س
6 - 4 - 8	ک پ	6 = q - 3	£ C C C C C
7 = 3 + 5	S S S	I2 = I2	<i>S</i> S M
1.OA.7			





or false.





How can you find the answer?

1.0A.8















Pencil Toppers



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I.NBT. I

I20 Chart										
I								9		
				15						
21										
									40	
		43								
						57				
							68			
									80	
			84							
								99		
	102									





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How can you find the answer?





I.NBT.2(b)

Place Value 11 -

61






I.NBT.2(c)









I.NBT.3



Cut out the numbers and glue.

31	4	10	50	37
25	2	19	46	14





Ten More, Ten Less

One Hundred Chart									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



one less	one more	ten less	ten more
, 3	5,	, I2	q,
, 17	21,	, 24	38,
, 35	47,	, 30	54,
, 52	59,	, 43	67,
, 65	73,	, 7	80,





|.MD.|







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Lomparing Objects





1.MD.2



1.MD.2







I.MD.3



How can you find the answer?

Cut out and label the clock.



Graphing Information









Question:

After school, 7 children play baseball, 7 children play soccer, and 4 play basketball. Can you draw a picture graph to show the information above?

How can you find the answer?



3 Dimensional Shapes





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		ctan, ctan,
		ohere gular cube vrami









you cut one pizza in half and one pizza in four equal parts? I would like each piece to have a different topping.

How can you find the answer?

Counting Money











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Word Problems with Money

Tony have?

the store?



2.MD.8 ®TeamKonechy20H

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Year End Journal





THANK YOU

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