

Family Math Night

Clothesline Equations Collaborative Project



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Clothesline Equations Collaborative Project

Materials Needed

- Beginning (K/1), Intermediate (2/3), Advanced (4/5) activity sheets
- Beginning, Intermediate, Advanced table tents
- colored markers
- black markers, 10-15
- pencils, 10-15
- 0-110 (or 0 - 100) charts, 5
- large 1-20 number path
- pre-made numbers to hang on clothesline, 3-4
- scissors, 10-15
- clear tape, 1-2
- cord, 30'
- clothespins, optional
- fraction tiles, optional

Mathematical Background

Number lines help children see how numbers relate to each other. When students place a number on a number line, they have to think about where that number belongs. That means they're comparing it to other numbers and thinking about its size. As students move into the upper elementary grades, number lines become even more important because they help children understand numbers between numbers—like fractions and decimals.

This activity is adapted from the original Clothesline Math idea. Traditionally, students hang only a number on the clothesline. In this version, students also include a representation of their number—a picture for kindergartners and an equation for grades 1–5. Students choose the number they want to work with.

There are several goals for this activity. The first goal is for students to choose a number and create an equation that matches it. To increase the challenge at the Intermediate (2/3) and Advanced (4/5) levels, Intermediate students work with even and odd numbers, while Advanced students work with fractions and mixed numbers.

A second goal is for students to think carefully about where their number belongs on the clothesline. Including a 1-20 number path near the left-hand side of the clothesline can act as a support tool for these young students. On the activity sheets, only Beginning Level students use the numbers 1–20 because they are still learning how numbers are placed on a number line. Having older students add numbers like $2\frac{1}{2}$ between 2 and 3 would be confusing for these early learners.

As students begin hanging their numbers, you can expect some shifting and rearranging. For example, if 45 and 46 are already hanging next to each other and a student needs to

place $45\frac{1}{2}$, the numbers will need to slide the numbers apart to make room for $45\frac{1}{2}$ to be placed in the correct spot.

Another goal is for students to see that numbers can be composed in different ways. Representations can be taped vertically so students can compare how different equations (or pictures in the case of kindergarteners) all connect to the same number.

Prep Work

- Print the Beginning, Intermediate, Advanced activity sheets on cardstock (printing each level on a different color helps keep things organized)
- Print the Beginning, Intermediate, Advanced table tents on cardstock, cut slits then fold
- Make 3-4 clothesline equations to hang on the clothesline in advance of the event
- Gather small containers for the colored pens and scissors (optional)

Station Table Set-Up

- Hang the clothesline near the station.
- Place the 1-20 number path on the wall near the left-hand side of the clothesline.
- Place the Beginning, Intermediate, and Advanced table tents on the table.
- Place the activity sheets, pencils, colored pens, and scissors on the table.
- Include at least one garbage/recycling can near the station.

During the Event

TIP #1: It's a good idea to have two station facilitators helping at this station. Because this activity has several steps, it's difficult to support everyone if there is only one facilitator.

TIP #2: Adding the clothespins: The key here is to make sure participants hang their number "tent" on the clothesline **BEFORE** they add the clothespin. Hanging the tent first then adding the clothespin helps ensure that the number hangs correctly.

This station can get pretty messy quickly. Throughout the event, you'll want to make sure left-over paper is thrown away.

Collaborative Clothesline EQUATIONS

DIRECTIONS

Step 1

Choose one number from **1-20**.

Step 2

Use a **BLACK** pen to write your number on the equation strip in the box under the fold line.

Step 3

Use a pencil and the thinking space below to draw a picture OR create an equation that equals your number.

Example #1: 



Example #2: $7 = 3 + 4$ or $7 = 10 - 3$

Thinking Space

Step 4

At the bottom of the equation strip, write your name on the line. Then add your drawing or equation underneath.

Step 5

Use the colored pens to decorate the border around the box where you wrote your number.

Step 6

Cut out your equation strip and fold on the fold line.

Step 7

Hang your equation in the correct place on the clothesline.

THANK YOU
for helping create our
Collaborative Clothesline Equations!

Equation Strip

↓ Fold Line ↓

_____ 's equation



Collaborative Clothesline EQUATIONS

DIRECTIONS

- Step 1** Choose one number from **21-110**.
- Step 2** Use a **BLACK** pen to write your number on the equation strip in the box under the fold line.
- Step 3** Use a pencil and the thinking space below to create an equation for that number using **at least one odd number and at least one even number**.

Example #1: $27 = 20 + 7$ or $27 = 30 - 3$

Example #2: $22 = 30 - 7 - 1$ or $22 = 10 + 9 + 3$

Thinking Space

- Step 4** At the bottom of the equation strip, write your name on the line. Then add your equation underneath.
- Step 5** Use the colored pens to decorate the border around the box where you wrote your number.
- Step 6** Cut out your equation strip and fold on the fold line.
- Step 7** Hang your equation in the correct place on the clothesline.

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Equation Strip

↓ Fold Line ↓

_____ 's equation



Collaborative Clothesline EQUATIONS

DIRECTIONS

- Step 1** Choose a whole number, fraction, or mixed number **greater than 20**.
- Step 2** Use a **BLACK** pen to write your number on the equation strip in the box under the fold line.
- Step 3** Use a pencil and the thinking space to create an equation for that number. **Your equation MUST include fractions and/or mixed numbers.**

Example #1: $48 = 47 + \frac{1}{4} + \frac{3}{4}$

Example #2: $27 = 25 + \frac{2}{1}$

Example #3: $52\frac{1}{4} = 55 - 2\frac{3}{4}$

Thinking Space

- Step 4** At the bottom of the equation strip, write your name on the line. Then add your equation underneath.
- Step 5** Use the colored pens to decorate the border around the box where you wrote your number.
- Step 6** Cut out your equation strip and fold on the fold line.
- Step 7** Hang your equation in the correct place on the clothesline.

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Equation Strip

↓ Fold Line ↓

_____ 's equation

Mixed number:

A mixed number is a number that has two parts, a whole number, and a fraction, written together as one value. Ex: $3\frac{1}{2}$

Whole number:

A whole number is any number you can count with that has no fractions and no decimals. Ex: 1, 2, 3, 4...

Fraction:

A fraction is a number that shows part of a whole or part of a group. Ex: $\frac{1}{2}$

Note: A fraction where the top number is bigger than or equal to the bottom number is called an improper fraction.



Make a slit in the paper by cutting the line all the way through to the edge.

Table Tent

Fold on the dotted lines. Feed the slits together to make a table tent. Place on the table in the appropriate location.

Beginning

Beginning



Make a slit in the paper by cutting the line all the way through to the edge.



Make a slit in the paper by cutting the line all the way through to the edge.

Table Tent

Fold on the dotted lines. Feed the slits together to make a table tent. Place on the table in the appropriate location.

Intermediate

Intermediate



Make a slit in the paper by cutting the line all the way through to the edge.



Make a slit in the paper by cutting the line all the way through to the edge.

Table Tent

Fold on the dotted lines. Feed the slits together to make a table tent. Place on the table in the appropriate location.

Advanced

Advanced



Make a slit in the paper by cutting the line all the way through to the edge.

Thank you!

Thank you for purchasing this Family Math Night Collaborative Project! This project (and all my other projects) are such a great way to involve families in a fun, engaging, and academic (!) way! You'll end up with a beautiful product that can be displayed for all to see and admire.

A little background on the projects

Our company sells Family Math Night kits to help make it easy for schools and organizations to host an event. As we were beta testing the kits at different schools I wanted to give them a gift for allowing us to use their school site and community. That's when I came up with the idea of these Collaborative Projects. If I could get all the participants involved in making a small piece that, when combined with all the other pieces, would create a fabulous product that everyone had a hand in - well, that would be the perfect gift. It turned out to be such a huge success that I now try to include one in each event that I do.

Although these projects were designed to be done during a Family Math Night event, they work just as well in the classroom. If you have younger students, consider working with a buddy class of older students who can help the younger ones. It's such a wonderful way to build positive relationships while getting in some great math work!

Connect with me

And, finally, I'd love to know how your project turns out and if you've learned anything along the way that I can pass on to others. So, please feel free to connect with me. I respond to every question and comment that I receive!

Happy teaching!

Karyn

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