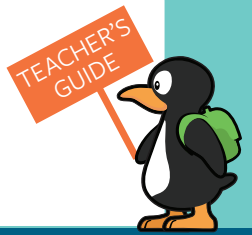




Welcome to the ST Math Activity Pages!



What is it?

The ST Math Activity Page is a companion to ST Math. Students build on the concepts and puzzles offered in ST Math by exploring their favorite games further. It can be used like an **activity page** and a flexible **instructional resource**.

On each student page you'll find:

QR codes to play the ST Math puzzles related to each page.

Problems to build on the ideas from the ST Math games.

Opportunities for students to **show their thinking**.

The sample page is titled "FAIR SHARING" and includes a QR code in the top left corner. It features two main problem areas. The top area shows a grid of 12 pink blocks and a speech bubble from a character named Leilah saying, "This is how I'm going to solve it." Below this is a grid of 12 pink blocks and a speech bubble from a character named Donner saying, "This is my strategy." The bottom area shows a grid of 12 purple blocks and a speech bubble from a character named Donner saying, "This is my strategy." The page also includes a section for "FAIR SHARING" with a grid of 12 pink blocks and a speech bubble from a character named Leilah saying, "This is how I'm going to solve it." The page is decorated with various animal characters and a small blue square character with a pencil.

What's different?

These are not your traditional worksheets. In the ST Math Activity Page, you'll notice:

Fewer directions. Students are encouraged to have agency in their learning, choosing how they want to approach problems.

Opportunities for students to express and **build their identity**, making personal connections to math.

Moving the focus away from "right vs. wrong" to eliciting student thinking and their strategies.

Many paths to solutions and ways to answer problems, because mathematical thinking is flexible and creative!

Non-routine and novel problems that will ask students to try out their ideas and take risks—qualities needed in creative problem solving.

How can I use it?

The ST Math Activity Page can be used for:

- Additional practice
- Homework
- Early finishers
- Small groups
- Whole group discussion
- After school
- Review

Teacher Guide Overview:

You will find these resources in the Teacher Guide.



Schema Development

This gives you an overview of the concept and approach that is being developed on the page.



Discussion Questions

Use these questions to facilitate academic discourse and deeper learning.



Support

These are ideas for how you might provide additional support if a student gets stuck.



Extensions

The learning doesn't end after a question is answered! These prompts help extend and deepen student curiosity and learning.

LOOK FOR

These are tangible things you can look for when monitoring student work, such as strategies and misconceptions.

Answer Keys

These are suggested and possible answers, but you might be surprised by what else your students come up with!

Students are developing strategies for division. The characters up top show two common strategies: dealing (Leilah) and grouping (Donner).

How are Leilah and Donner's strategies different? Why do both work?

FAIR SHARING

Complete each student's work.

Each pig carries **4** blocks.

Leilah: This is how I'm going to solve it.

Donner: Whose strategy do you prefer? Why? This is my strategy.

Either strategy is valid. See student reasons for their preferred strategy.

There are **20** total blocks.

There are **4** of us turtles.

Each of us would carry **5** blocks.

Each frog would carry **4** blocks.

Each turtle would carry **8** blocks.

LOOK FOR students who continue using one of the characters strategies throughout the page.

Write an equation to match your work

What if I had 5 frogs, could they each carry an equal number of blocks?

What does the card on the left represent? How will you use it to help you solve this puzzle?

What does the $\times 2$ represent in the last problem? What is happening two times?

Use manipulatives to model the equations.

FRUIT MONSTER

$4 \times 3 = 12$

$4 \times 4 = 16$

$3 \times 5 = 15$

If it's our birthday soon and we each want a cake. The recipe calls for 3 cups of sugar and 4 eggs. Each cake will have 10 slices.

$6 \text{ cups of sugar} = 2 \times 3$

There's a $\times 2$ in each of these equations because...

$2 \times 4 = 8 \text{ eggs}$

$2 \times 10 = 20 \text{ slices of cake}$

We're twins so there's two of everything.

LOOK FOR students who circle equal groups to keep track of their counting.

What does the 4 represent in the equation? What does the 3 represent?

Show students 4 monsters and 24 pieces of fruit. How much fruit is each monster eating?

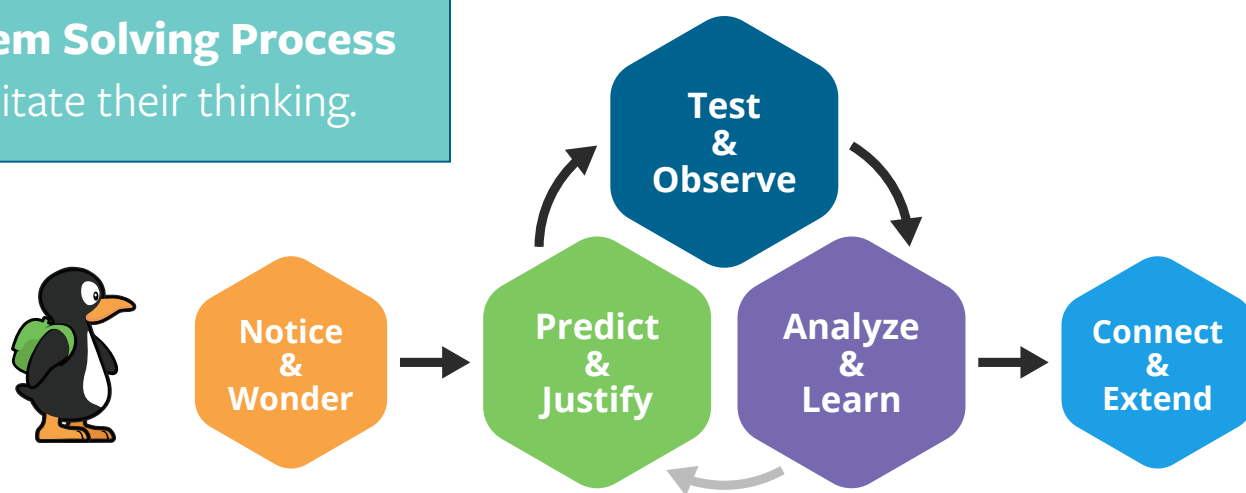


New to ST Math?

Scan this QR code or visit the link to learn more about ST Math.

<https://bit.ly/3cqW04m>

Engage students in the
Problem Solving Process
to facilitate their thinking.



What could this look
like in practice?



Students can **notice and wonder** about what they see on the page, develop language, build intuition.

and **predict and justify** their strategies of how they'll approach the page.

The novel, non-routine problems provide many opportunities to **test, observe, and analyze** a variety of strategies.

The activity pages naturally facilitate academic discourse as students **share and exchange ideas**, and **learn** from one another.

Students build **connections** between the pages and games, across math concepts, and **extend** to the world around them.

1. Play the ST Math Game

that goes with the page

- Project the game and play together as a class
- Students scan the QR code and play on their own

2. Preview the page

- Notice & Wonder
- Review new vocabulary
- Try a problem as a class

3. Do the page

- In pairs or table groups
- Monitor and support students

4. Review the page

- Discuss student work and strategies
- Share challenges, successes, and creative thinking

Learning is built, not transferred

1. Facilitate student thinking
2. Position students as authors of their own learning
3. Support students in developing the “essential skills”

See how students build their learning on a page!

1

Focus on the type of thinking you want to facilitate.

wondering, hypothesizing, testing, analyzing, critiquing, justifying

2

Students are in the driver's seat of their own learning.

making choices, sharing their voice, building their identity

3

Students develop the “essential skills” of being creative problem solvers.

perseverance, risk-taking, agency, flexibility, confidence, collaboration

Students can express themselves and their imaginations.

Multiple correct solutions allow students to think flexibly and justify their reasoning.

Students can learn from their mistakes and develop new strategies.

HOW MANY CREATURES SYMBOLIC

8

35

9 2 4 2

6 18 20 20

12 Shoe Store 12 24 Shoe Store 24

How many of each of us can shop at each shoe store?

2 4 6 8 12

3 6 8 12

I can't shop at either of these shoe stores because...

5 10 15 20 25
I need shoes that count by 5's

I noticed a pattern in the number of creatures that shop at each shoe store. I noticed that...

they are all even numbers except the dog is 3

Students can choose how they want to answer.

Students develop and connect language to mathematical thinking.

Get a window into student thinking to drive discourse that will support their conceptual development.