



# Get to Know ST Math Texas

## Introduction

ST Math Texas is a visual instructional program that leverages the brain's innate spatial-temporal reasoning ability to solve mathematical problems. It's unique, patented approach provides all students access to standards-aligned learning through challenging puzzles, non-routine problem solving, and formative feedback.

This visual learning approach helps students solve unfamiliar math problems, recognize patterns, and develop conceptual understanding, regardless of skill level or language background.

In addition to solving puzzles independently, ST Math Texas utilizes Puzzle Talks. These teacher-facilitated mini-lessons use ST Math Texas puzzles in whole or small group settings to engage students in rich mathematical discourse.

## Experience ST Math Texas

Use the links on the right to provide guidance in accessing, understanding, and navigating the ST Math Texas curriculum and Puzzle Talks.

### Curriculum

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[Games](#)

[Student View](#)

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### Puzzle Talks

[Get Started](#)

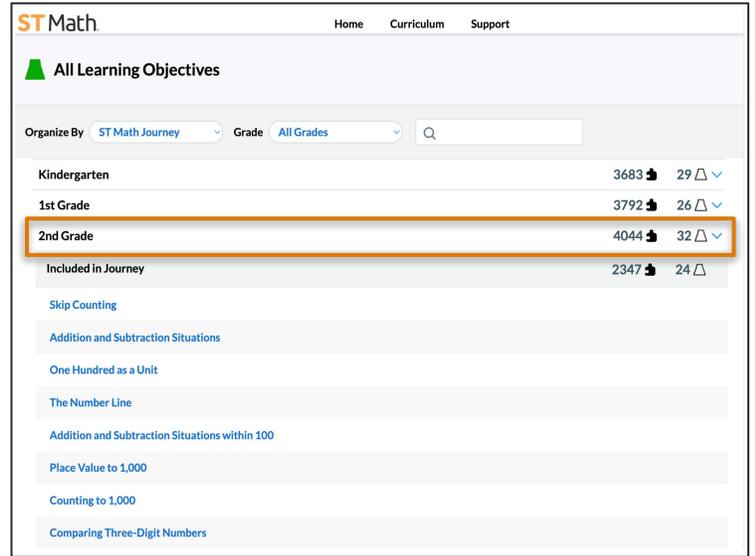
[Overview Navigation](#)

[Lesson Navigation and Tools](#)

# Curriculum - Get Started

## STEP 1 - View All Learning Objectives

Click a grade level to expand it and view All Learning Objectives included with ST Math Texas.



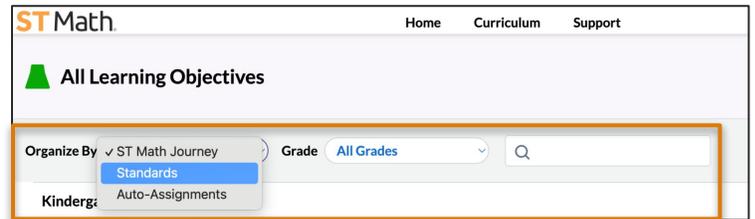
The screenshot shows the ST Math website interface. At the top, there are navigation links for Home, Curriculum, and Support. Below the header, the page title is 'All Learning Objectives'. There are two dropdown menus: 'Organize By' set to 'ST Math Journey' and 'Grade' set to 'All Grades'. A search bar is also present. A table lists various learning objectives with their respective counts and expand/collapse icons. The '2nd Grade' row is highlighted with an orange border.

Learning Objective	Count	Expand/Collapse
Kindergarten	3683	29
1st Grade	3792	26
2nd Grade	4044	32
Included in Journey	2347	24

Below the table, there are several expandable sections for specific topics:

- Skip Counting
- Addition and Subtraction Situations
- One Hundred as a Unit
- The Number Line
- Addition and Subtraction Situations within 100
- Place Value to 1,000
- Counting to 1,000
- Comparing Three-Digit Numbers

Alternatively, use the Organize By, Grade, or search filters at the top to see objectives aligned to specific standards, grade, or topic.



The screenshot shows the ST Math website interface. At the top, there are navigation links for Home, Curriculum, and Support. Below the header, the page title is 'All Learning Objectives'. There are two dropdown menus: 'Organize By' set to 'ST Math Journey' and 'Grade' set to 'All Grades'. A search bar is also present. The 'Organize By' dropdown menu is open, showing options for 'Standards' and 'Auto-Assignments'. The 'Standards' option is highlighted with a blue background.



# Curriculum - Objective Overview

ST Math Texas objectives progress students from conceptual to symbolic understanding of a math concept. In the student console. Objectives are represented by islands, each with a series of games students play.

## STEP 1 - Open an Objective

With the grade level expanded, click a blue objective name to open it.

ST Math Home Curriculum Support

All Learning Objectives

Organize By **ST Math Journey** Grade **All Grades**

Kindergarten	3683	29
1st Grade	3792	26
2nd Grade	4044	32
Included in Journey	2347	24

Skip Counting

**Addition and Subtraction Situations**

One Hundred as a Unit

The Number Line

Addition and Subtraction Situations within 100

Place Value to 1,000

Counting to 1,000

Comparing Three-Digit Numbers

## STEP 2 - View the Objective Overview

From the Overview tab, you can view a summary of the objective content, the grade level, the number of puzzles in each, and play the objective.

Addition and Subtraction Situations

**Overview** Games Assess Standards

**At a Glance**

In this Objective, students:

- Use addition and subtraction to solve problems involving situation of adding to, taking from, putting together, taking apart, and comparing with unknowns in different positions
- Solve problems using mental strategies
- Solve problems using ten frames
- Use more than, less than, equal to to compare two numbers

2nd Grade 172

[Play This Objective](#)

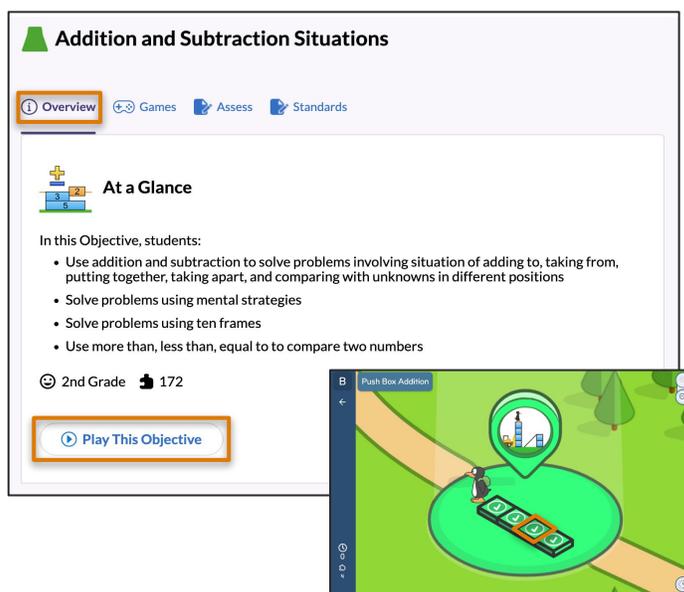
# Curriculum - Games

Each ST Math Texas game has multiple levels that increase in complexity. In each level, students play a series of puzzles and collect a puzzle piece for each upon the completion of the level. ST Math Texas is mastery based, so students must solve a puzzle correctly in order to move to the subsequent puzzle.

## STEP 1 - Open a game or game level

### Option 1 - from the Objective Overview

At the bottom of the Objective Overview, select Play This Objective. A new tab will open, taking you to the first game at the beginning of the objective island. From here, click on any green check to go to a specific game level.

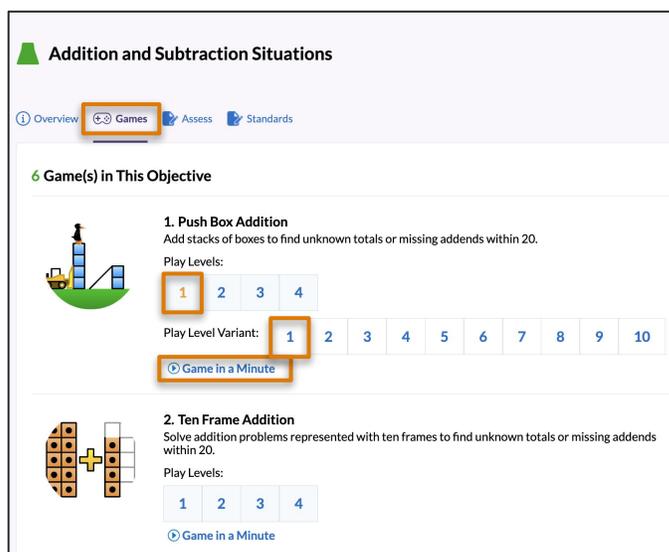


### Option 2 - from the Games tab

Click the Games tab to the right of the Overview tab.

Here, you will see all games and corresponding levels within an Objective. Below the level numbers, you will find Game in a Minute videos. These videos provide quick tutorials for teachers.

To open and play through a level, click a level number. When you do, the Play Level Variant options appear. Each variant showcases a set of puzzles students could play within a given level. Click the first variant to begin.



\* Continued on the next page.

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# Curriculum - Games *cont.*

## STEP 2 - Play a game

ST Math Texas games are designed without instructions so utilizing the Problem Solving Process is a helpful way to work through puzzles.

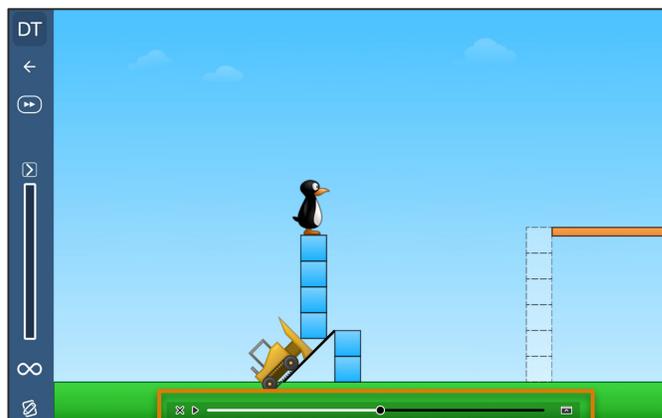
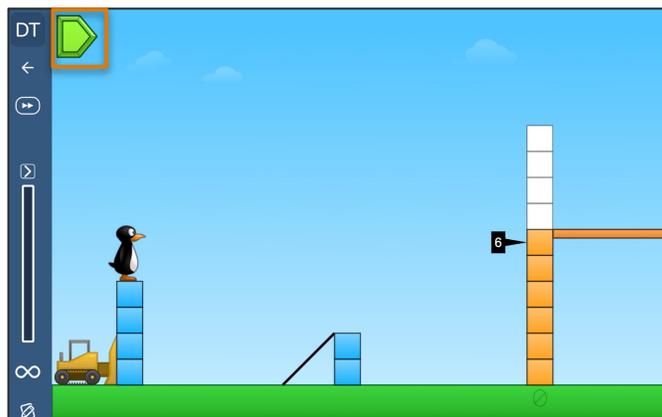
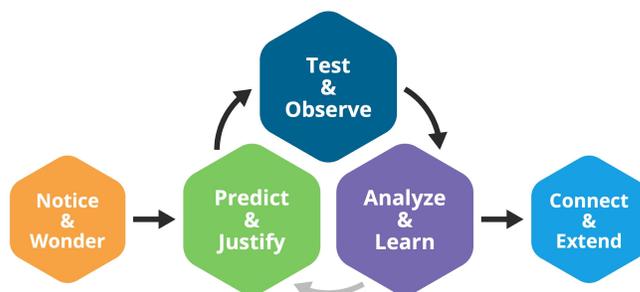
Start by noticing elements of the puzzle. What do you think you are supposed to do to solve it? What can you click on or move?

Once you make a prediction, adjust the puzzle accordingly and select the green button to test out your idea.

Analyze and learn from the animation that plays. It may take multiple attempts to answer the puzzle successfully. That's okay! Your brain is primed for learning when it encounters challenges.

**Note:** This experience allows for an infinite number of attempts to solve a puzzle. In the student experience, students have two tries to solve a puzzle. If both tries are unsuccessful, they will begin the level again.

**Tip:** If you need more time to process and learn from the animation, use the controls at the bottom of the screen that appear once it begins playing. Doing so will allow you to pause, play, and rewind to move at your own pace.



\* Continued on the next page.

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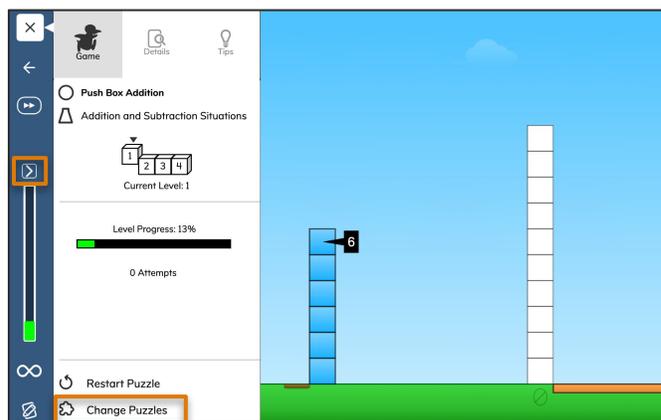
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## Curriculum - Games *cont.*

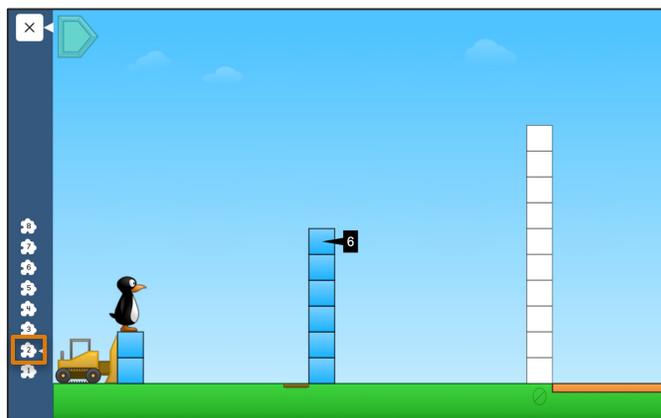
### STEP 3 - Change puzzles within a level

To explore all the puzzles within a level variant, select the arrow just above the progress bar on the left side, then click Change Puzzles.



Click on any of the puzzle pieces on the left side to navigate to puzzles within a level without playing them.

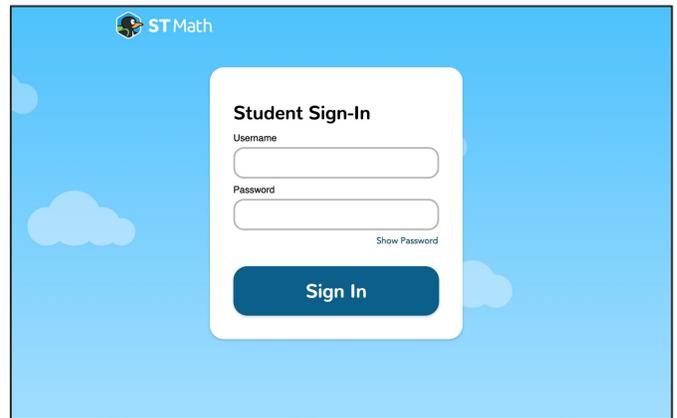
**Note:** Students need to solve the puzzle correctly in order to progress; they do not have the ability to jump to any puzzle of their choosing.



# Curriculum - Student View

## STEP 1 - Log in as a student

To explore ST Math Texas as a student, use the provided link, username, and password to log in.



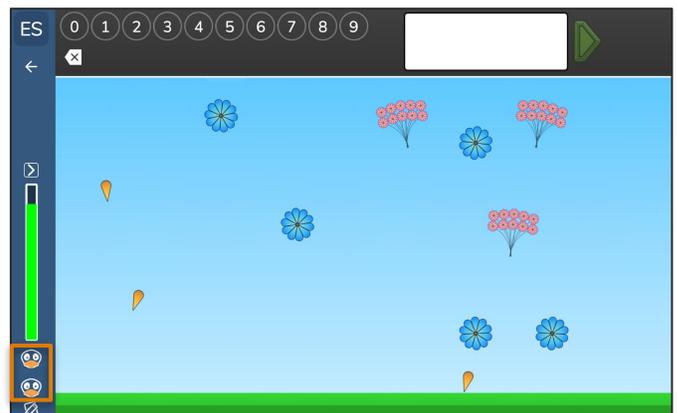
## STEP 2 - Play a game level

Click the white game level tile where Jiji the penguin stands.

As you begin the level, you may start at the beginning or where another person left off.



On the bottom left, you will notice that there are two Jiji the penguin heads. These represent the number of attempts students have to make it through the level. If both attempts are used, students restart the level.



# Curriculum - Assessment and Standards

In 2nd grade and up, students take a short pre-quiz and post-quiz before and after each Objective. Post-quizzes are provided as a growth measure and help educators identify students who have strong conceptual models but may struggle to link the model to symbolic math.

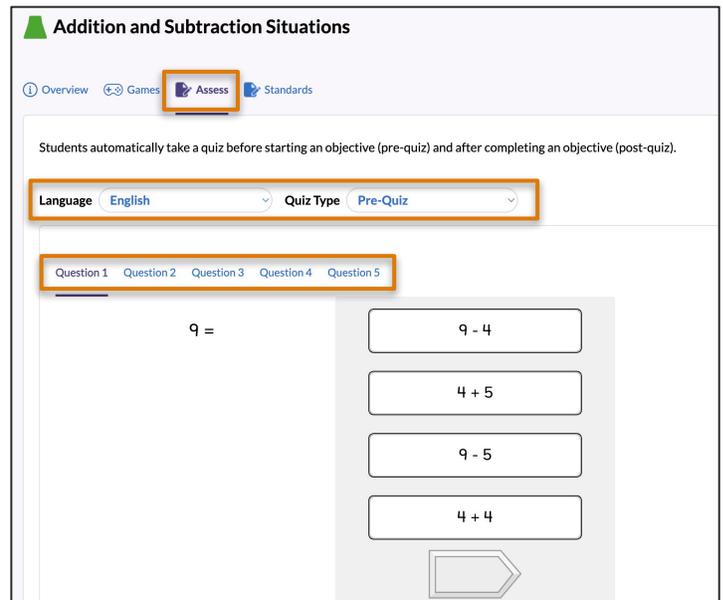
Each ST Math Texas Objective is labeled as recommended or related to given mathematics standards. Because of this, standards are grouped as Addressed and Partially Addressed.

## STEP 1 - View quiz questions

From an Objective page, click on the Assess tab.

Use the Language or Quiz Type filters to adjust the questions accordingly.

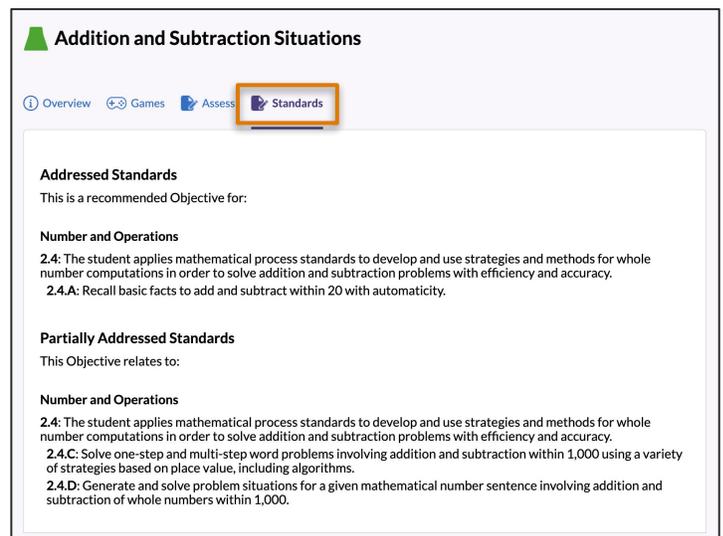
Select the question number to change the question preview.



The screenshot shows the 'Assess' tab selected in the 'Addition and Subtraction Situations' interface. The 'Assess' tab is highlighted with an orange box. Below the navigation tabs, there are two dropdown menus: 'Language' set to 'English' and 'Quiz Type' set to 'Pre-Quiz'. Below these, a row of question numbers 'Question 1' through 'Question 5' is shown, with 'Question 1' highlighted. The main content area displays a math problem:  $9 =$  followed by four multiple-choice options:  $9 - 4$ ,  $4 + 5$ ,  $9 - 5$ , and  $4 + 4$ . A right-pointing arrow is at the bottom right of the options.

## STEP 2 - View standards

Select the standards tab to view all standards addressed in the Objective.



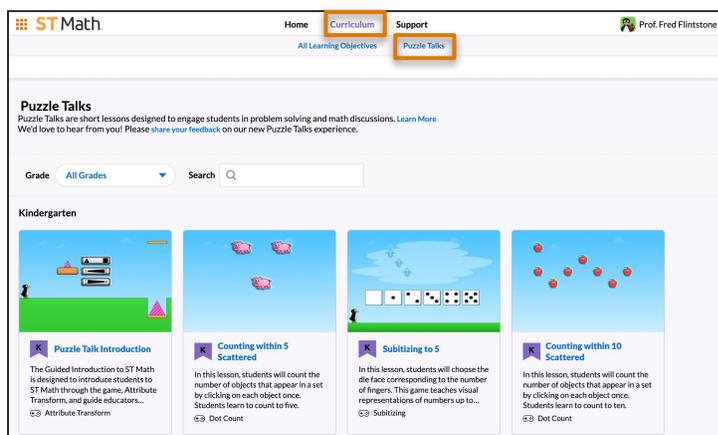
The screenshot shows the 'Standards' tab selected in the 'Addition and Subtraction Situations' interface. The 'Standards' tab is highlighted with an orange box. The content is organized into two sections: 'Addressed Standards' and 'Partially Addressed Standards'. Under 'Addressed Standards', it states 'This is a recommended Objective for:' followed by 'Number and Operations' and standard 2.4: 'The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy.' Below this is standard 2.4.A: 'Recall basic facts to add and subtract within 20 with automaticity.' Under 'Partially Addressed Standards', it states 'This Objective relates to:' followed by 'Number and Operations' and standard 2.4: 'The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy.' Below this are standards 2.4.C: 'Solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms.' and 2.4.D: 'Generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000.'

# Puzzle Talks - Get Started

Puzzle Talks are teacher-facilitated mini-lessons that use ST Math Texas puzzles in whole or small groups to engage students in rich mathematical discourse. The Puzzle Talk platform is used to launch a projected lesson and guide students in discussion related to a series of scaffolded puzzles. Provided teacher notes, questions, and optional materials guide the conversation along the way.

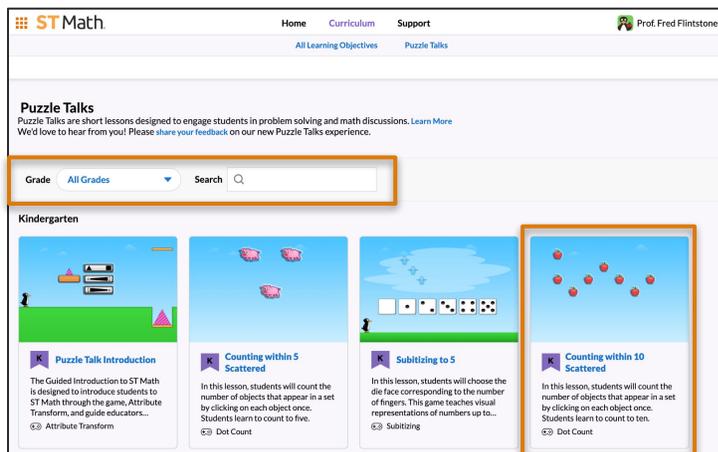
## STEP 1 - Open Puzzle Talks

Select the Curriculum from the menu at the top of the page. Then select Puzzle Talks to begin your exploration.



## STEP 2 - Select a Puzzle Talk

Scroll and click a Puzzle Talk tile of your choice, or use the Grade and Search filters at the top to narrow your options.



# Puzzle Talks - Overview Navigation

## STEP 1 - View the Overview page

The Puzzle Talk Overview page contains the mathematics objectives, optional materials, vocabulary, and lesson notes for each puzzle.

The screenshot shows the ST Math interface for the lesson '5: Counting within 10 Scattered'. At the top, there are navigation links for Home, Curriculum, and Support, along with the user profile 'Prof. Fred Flintstone'. Below the lesson title, there is a 'Back to Grade and Lesson List' link and a description: 'In this lesson, students will count the number of objects that appear in a set by clicking on each object once. Students learn to count to ten.' A 'Dot Count' icon is visible. A blue 'Start' button and a 'Print' button are on the right. The 'Puzzle Talk Objectives' section lists: 'Count and recognize quantities from 0 to 10 using numerals and visual models.', 'Visual models include objects presented in linear, array, circular and random arrangements.', and 'Use ten frames as a useful tool to organize the objects in an easily recognizable pattern.' The 'Preparing for This Puzzle Talk' section includes 'Materials' (Whiteboard and marker, Counters, Ten Frame Math Mat, Optional Exit Ticket Questions) and 'Additional Resources' (Objective: Numbers and Objects to 10, Game: Dot Count, Game in a Minute). A 'Vocabulary: total, count' section and a 'Rate this Puzzle Talk' link are also present.

Scroll down to view the lesson notes. Here you will see an image of each puzzle and corresponding details, look fors, and discourse questions. Click the tabs for each to view the related content.

The screenshot shows the 'Puzzle Talk' section of the ST Math interface. It features three puzzle cards, P1, P2, and P3. Each card has a 'Details', 'Look Fors', and 'Discourse' tab. The 'Details' tab is selected for P1, showing three numbered instructions: '1. Students share what they see on the screen (notice & wonder).', '2. Students share what they think they should do and explain their thinking (predict & justify).', and '3. Try different solutions and discuss what happened (test & observe, analyze & learn).'. Similar instructions are provided for P2 and P3. The 'Look Fors' and 'Discourse' tabs are currently inactive.

## STEP 2 - Start a lesson

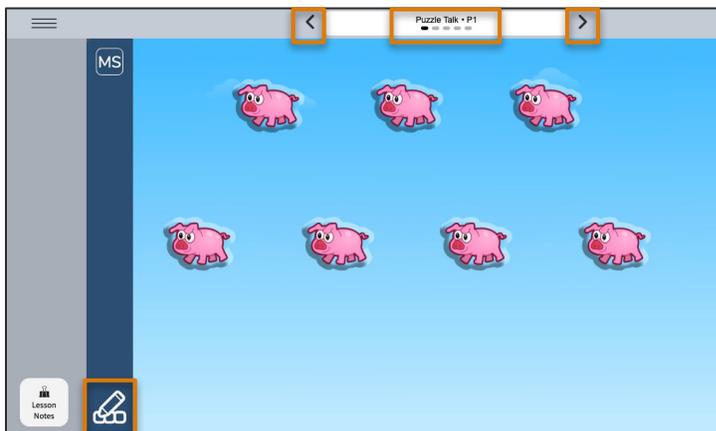
On the top right of the Overview page, click the blue Start button to begin the lesson.

This is a close-up screenshot of the 'Start' button on the Overview page. The button is blue with white text and is highlighted with a blue border. It is located in the top right corner of the lesson overview section, next to a 'Print' button.

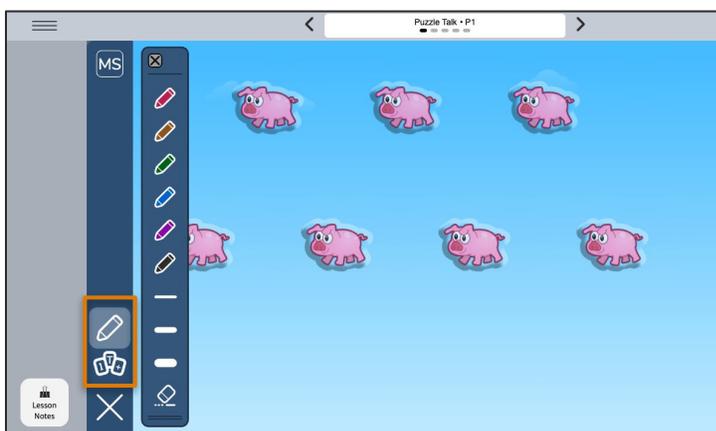
# Puzzle Talks - Lesson Navigation and Tools

## STEP 1 - Navigate lesson puzzles and tools

The lesson opens to a title slide. At the top of the lesson slide, use the navigation bar to move within a lesson. Use the left and right arrows or click the middle title to open the navigation panel and select a specific puzzle.



As you do so, notice the available drawing and expression tools on the left.



On the bottom left, click Lesson Notes to view details, look fors, and discourse questions that adjust to each slide.

