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# Game of Totals

## Grades 3-5

### Introduction

This activity is a fun way to develop an understanding of quantity and ways to make a total of 25. In this activity students will have an opportunity to count, add, keep track of totals, and use visuals to see the sum. Students will consider what quantities they will need to reach a total of 25 and will also create a strategy for reaching a total before their partner does.

### Video

*Speed is not Important*, https://youcubed.org/weeks/week-3-grade-3-5/

### Agenda for the activity

| Activity | Time | Description | Materials |
|---|---|---|---|
| Mindset Message | 5 min | Play the mindset video, ***Speed is not Important***, https://youcubed.org/weeks/week-3-grade-3-5/ | • Mindset Video day 2, ***Speed is not Important*** |
| Play Game of Totals | 15 min | Introduce the Game of Totals.<br>• Play it once with your students. Encourage them to consider what strategies they are using to get to 25 first<br>• Invite students to play the game with a partner a few times.<br>• In partners, invite students discuss their strategy. | • Counters (plastic circles, pennies, beans, their own fingers, etc.)<br>• Rules Handout<br>• Recording Handout |
| Whole class conversation | 5 min | Discuss:<br>• As you continue to play, does Player 1 or Player 2 seem to win more often?<br>• Is there a way that a player can make sure to win every time? | |

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|---|---|---|---|
| Play Game of Totals with Numbered Fingers | 10 min | • Introduce students to the finger perception development aspect of the game described below.<br>• Students play again after discussing strategies. This time have students integrate finger perception activities while playing.<br>• Invite students to change the total and use different numbers to select from. Does the strategy change? | • Hand Handout |
| Mindset Message Closure | 5 min | Speed is not Important: Ask students to reflect on the belief discussed in the video that math is NOT about speed. What is important in math is to think carefully, deeply, and to make connections. | |

Activity

Play the game as an example for the class once. Encourage students to use counters while playing. It is always good to use manipulatives and models – reinforce this message with your students. It is good for brain connections. It is valuable for students to see visuals of quantities and to practice counting quantities and moving counters with their fingers. You can also hand out the Rules Handout that contains the table of numbers they can use for the game or have them write these numbers on their scratch piece of paper. Students could put counters next to the numbers so that they are constantly associating the number with its quantity.

Give students the Recording Handout as well. Each student should use a different color of pen. As they play, they should create visuals of their amounts as well as their numbers (For example: If I pick 3, I could draw three x's and I write 3 + ___). Let students choose how they would like to record their visuals (Organization and Shape: Circles, faces, x's). You can have a conversation as you introduce the game about possible different ways of recording their totals visually. Show them as well how to record the numbers. When recording the numbers each student should record the number they chose in a different color.

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This is a game for two players. The rules are:

- The first player chooses one of the numbers 1, 2, 3, 4, 5 and 6 and places that many counters on the table. The player also records that amount in visual form and as a number.
- The second player chooses a number from the same set, and adds it on to the first player's counters. That player records the amount in visual form and as a number in a different color than the first player.
- The players continue to take turns choosing a number from the set, adding it to the previous total and recording.
- The player who makes it to the total of 25 wins!

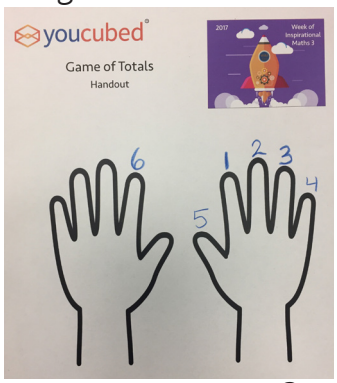
Try playing the game with a friend a few times.

Have students consider and discuss as whole class:

- As you continue to play, does Player 1 or Player 2 seem to win more often?
- Is there a way a player can make sure they will always win?

Discuss these questions as a whole class. After students have shared their thinking, invite students to play again having had a chance to hear other students' strategies. Invite students to play the game with a different total and different numbers to choose from. Does their strategy change?

This time when the players play, integrate finger perception development as well. Give students the Hand Handout. Each student can decide which fingers will be the 1 counter, 2 counter, 3 counter, 4 counter, 5 counter, and 6 counter and label it on the handout. Allow students to choose which fingers are 1, 2, 3, 4, 5 and 6 (left or right hand). These are the fingers they will use to move the 1st counter the 2nd counter the 3rd counter , etc.(depending on which number they choose.) Research has shown that finger perception triggers the same part of the brain that students use to do arithmetic. Studies have shown that increased finger perception predicts higher scores on arithmetic tests. Show students how to move the counters based on their fingers and then give them an opportunity to play the game again a few times.




Ask students to reflect on the belief discussed in the video that math is NOT about speed. What is important in math is to think carefully, deeply, and to make connections.

Extensions

- Try a different total with a different set of numbers to choose from.

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# Game of Totals

## Rules Handout

This is a game for two players. The rules are:

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- The second player chooses a number from the same set, and adds it on to the first player's counters. That player records the amount in visual form and as a number in a different color than the first player.
- The players continue to take turns choosing a number from the set, adding it to the previous total and recording.
- The player who makes it to the total of 25 wins!

Try playing the game with a friend a few times. Do player 1 and player 2 have equal chance of winning? Is there a way a player can make sure of winning?

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Give students the numbers below to remind them which numbers they can choose from to reach their total. Or have students write these numbers on their own paper. They could also put counters with these numbers to remind them of the numbers and the quantity associated with each number.

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

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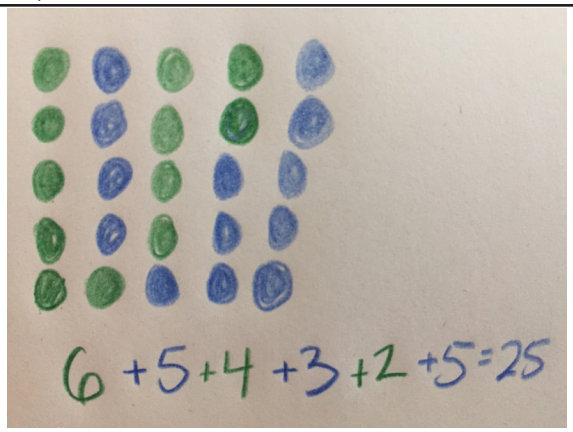
# Game of Totals

## Recording Handout

| Visual of Total (each player uses a different color): | Record numbers (each player uses a different color): |
|---|---|
|   | 6 + 5 + 4 + 3 + 2 + 5= 25 |
| | |
| | |

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# Game of Totals

## Hand Handout