DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)

Professional Development

Curricular Resources

Assessment

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About the DMTI Targeted Activities

These DMTI Targeted Activities modules are designed to be played or completed with a partner or in small groups. These supplement the Primary Math Assessment and DMTI curricular materials.

The activities are intended for teachers or caregivers to play or do with children to build necessary math skills, concepts and math language. Each activity can be completed in or played for 10 to 20 minutes. And if there are additional activities in a module, they are built to be more advanced.

IMA – Grade 3 - 6

Ratio and Proportion Concepts

Ratio and Proportion Concepts

What's involved:

- Seeing the relationship between quantities
- Visually growing and shrinking patterns
- Iterating units and partitioning space between numbers

Why it matters:

- Lays the foundations for algebraic thinking
- Helps students make sense of multiplicative situations
- Building the visual model helps students to see relationships between two units which can make it easier to generalize the relationship

Ratio and Proportion: Concentration

Materials

- Cards [Printout]

Ratio and Proportion: Concentration

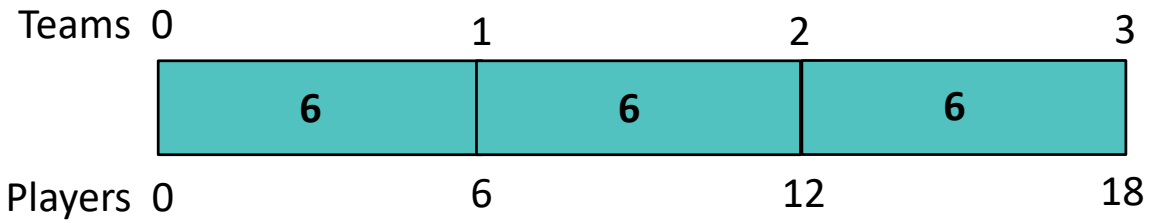
Activity

In this activity you will be matching models and situations by the ratio of players to teams for various sports. We will look at an example with an ice hockey team. There are 6 players on a hockey team - 5 players and 1 goalie.

A bar model representing 1 team might look like this.

This model would show 2 teams.

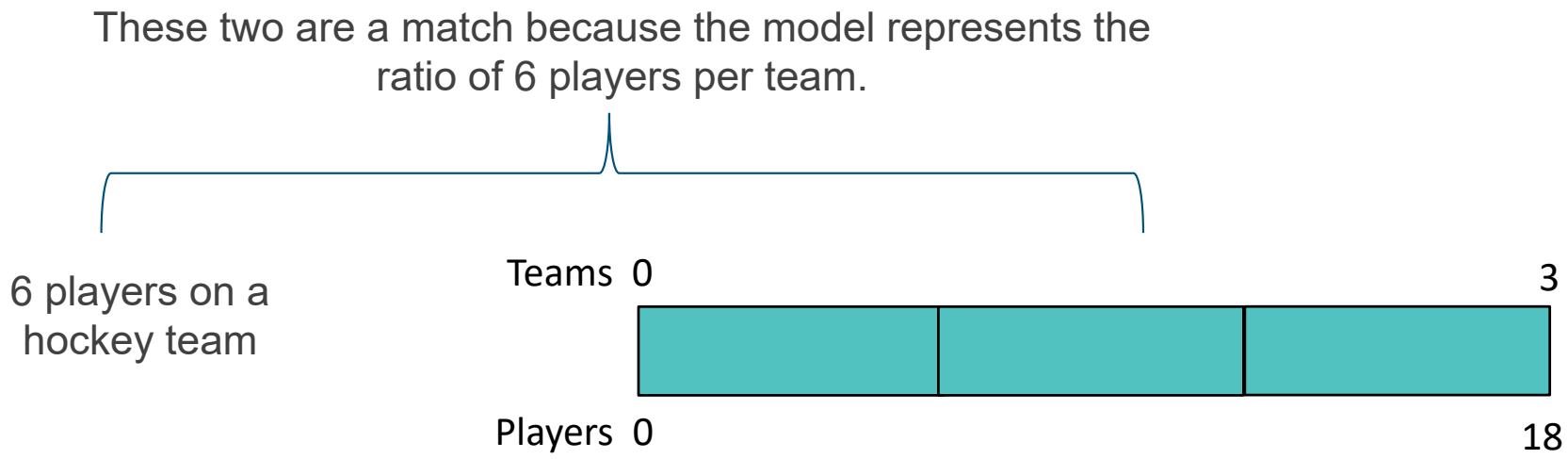
And, this model would show 3 teams.



Now let's see what this will look like in the game!

Ratio and Proportion: Concentration

Game Example



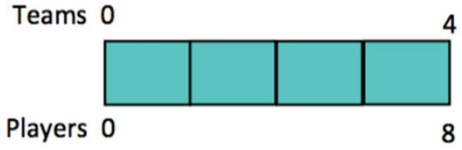
We can explain the match with one of the two sentences:

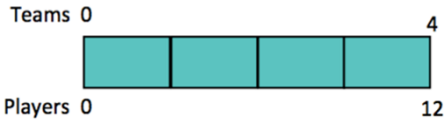
I know these two are a match because if 6 players are on 1 team then 18 players would be on 3 teams.

I know these two are a match because 6 iterated 3 times composes 18.

Game Instructions

1. Cut out the cards on the next two pages. Mix them up and lay them face down.
2. Turn over two cards.
   - If they a match, use on of the two sentence frames to explain how you know. You get to keep the pair.
   - If they are not a match, turn them over and it is the next person's turn.
3. Keep taking turns until all the cards have pairs have been found.

5 players on a basketball team	
4 players on a relay team	
2 players on a tennis team	
9 players on a baseball team	

11 players on a soccer team	
6 players on a volleyball team	
3 players on a curling team	
7 players on a water polo team	

Use one of the sentence frames to explain each pair.

I know these two cards are a match because if __ players are on 1 team then __ players would be on __ teams.

I know these two cards are a match because ___ iterated ___ times composes ___.

Extensions

1. Have the student fill in the missing labels on each bar model (like the first model for the hockey example).
2. Have the student draw each model and extend for another team (or two).
3. Look up teams sizes for other sports/activities and create bar models to represent one team, two teams . . .

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"The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students' learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments."

For more information contact
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