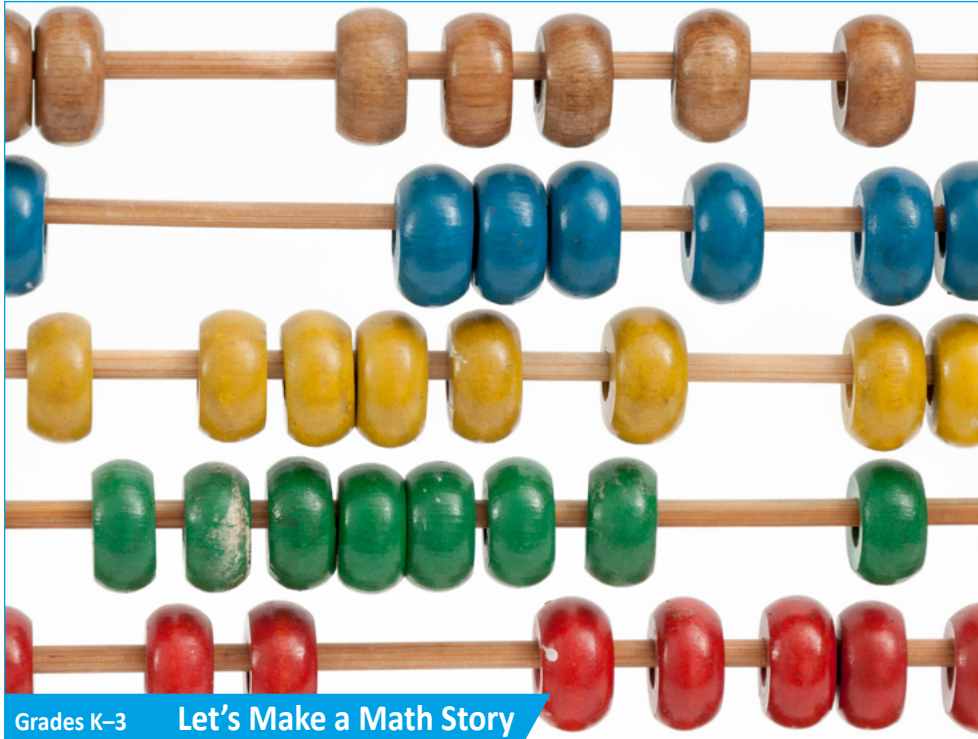




# Mathematics Cross-curricular Activities



Grades K–3 **Let's Make a Math Story**

## Instructions:

- Brief students on how they're going to make a math story as a group. First talk about different kinds of movements they can do and demonstrate them as a group (e.g., lunges, jumping jacks, high knees). Ask students if they know any other movements they could do.
- Now that you have some ideas of movements, write on the whiteboard (or just use hands and memory if outside or in the gym), and call on students to share a number and a movement (e.g., "Jake says we're going to do 5 pushups, how many more do we need to make 10?").
- Have students call out numbers and movements until they complete the full math story (e.g., "Okay, we have 5 push-ups, 3 jumping jacks, and 2 squats. Did we make

10? Let's check." And count up as a group).

- Have the students complete their math story by doing all of the movements! (e.g., "Now that we've made 10, we can do all of the 10 movements together. Count with me and let's go!").

## Variations:

- **Kindergarten:** Make 5
- **Grade 1:** Make 10
- **Grade 2:** Make 50-100, but incorporate benchmarks of 20, 25, 50, etc.
- **Grade 3:** Same as Grade 2, but have the students do so as a class conversation instead of using the whiteboard.
- **Grade 2 & 3:** Once you make 100, have students subtract movements in new benchmarks.



Grades K–7 **How Likely Is It...?**

## Instructions:

- Brief students on defining estimation and what the scale will be for the activity.
- Have students do a certain movement based on what they think the likelihood of an event is, given the scale you created.
- **Example:** Grade 2 & 3: Offer a three-option scale that first begins with an easy probability question. It may sound like, "How likely is it a dragon will fly over our school today?" where the options for guesses/estimates are likely, neutral, or not likely. If the students think it's likely, have them do jumping jacks. If they think it's neutral, have them do arm circles. If they think it's not likely, have them do squats.

## Variations:

- **Grades K-3:** Provide 2- or 3-scale options. For example, "Thumbs up or thumbs down."
- **Grades K-3:** Have students create and share their own questions. For example, "Tom is wondering how likely it is we will see a shark on the playground today?" and the class can respond using their movements.
- **Grades 4-7:** Have deeper discussions on probability, or provide a larger scale. For example, use a five-point scale and asking more complex questions like, "How likely is it we will have sunshine tomorrow?"

**Note:** Write scale options on the whiteboard, the more complicated they become.



# Mathematics Cross-curricular Activities



Grades 4–7 **The Usain Bolt Challenge**

**Equipment:** Metre stick

**Instructions:**

- Let students know who Usain Bolt is. This could sound like, “Does anyone know who the fastest person in the world is? Or, does anyone know who holds the record for the 100-m sprint? Usain Bolt is the fastest person in the world and holds the world record for the 100m sprint.”
- Show students a metre stick or use your wingspan and illustrate what a metre looks like.
- Ask students to estimate how many steps it may take them to get one metre (many will say one or two).
- Ask them, “Okay if you say two, how many steps is that to get 100m? Okay, 200 steps?”
- Have students complete a movement in 10 seconds, to compare their progress to Bolt’s. Here are some examples, that can be used in the classroom without access to a 100m running space. This could be high knees, skipping, hopping, etc. Here is an example of a scenario:

- a. High knees:** “Now we’re going to do our own Usain Bolt challenge. Since we’re in the classroom, we’re going to do high knees instead of sprinting. Usain Bolt can run 100m in 9.58 seconds, but we’ll give everyone a bit more time. We get 10 seconds to see how many steps (high knees) we can get.”
  - b. Stepping:** “Now that you can guess how many steps it takes to get one metre, estimate how many you can get in 10 seconds. Once you have an estimate in your head, stand up and push your chair in and we’ll start together. Remember your estimate because we’ll share them as a group later.”
- Count down and give everyone 10 seconds.
  - Once you’ve done the challenge, ask students to share their estimates and their outcomes.
  - Offer to do it twice, so students can attempt to get their estimates and outcomes closer together.



Grades K–7 **Robins & Ravens**

**Instructions:**

This game is to be played outdoors in the schoolyard, with numerous obstacles.

**Equipment:**

Class set of Dixie cups and a bag of shelled sunflower seeds or dried beans.

**Setup:**

- Split your class into groups of 9; have them decide on 8 Robins and 1 Raven within the group.
- Each Robin has a nest (Dixie cup); Ravens have a collective nest located beside the educator.

**Objectives:**

- Robins require 3 seeds / beans to feed one baby robin; the student able to feed the most babies wins the game.
- Ravens work together to take back seeds from the Robins and return them to their team nest.

**Instructions:**

- Ravens cover their eyes and count to 30; Robins use this time to hide their nests in the forest.
- Robins collect 3 seeds / beans from the educator and return to their nest to hide them. This process is repeated throughout the game.
- Ravens search for the Robins’ nests. If they find a nest, they can take 1 seed / bean at a time, and return it to the Ravens’ nest, beside the educator.

**Numeracy Concepts:**

**Primary Level:**

- Estimation – Students look at the seeds in the cup and make an estimate of how many they were able to collect.
- Grouping – Students sort their seeds into groups of 3 to determine how many babies they can feed.
- Counting – Students count their total number of seeds.
- Skip-counting – Students add their total number of seeds, counting by 3.

**Intermediate Level:**

- Estimation – See above.
- Multiplication – Students sort their seeds into groups of 3 and multiply to determine their total number of seeds.
- Division – Students count their total number of seeds and divide to determine the number of babies they can feed.

**Variations:**

- **Physical Literacy:** Students must perform an exercise (i.e. jumping jacks) to receive their seeds.
- **Science:** Change ratios to discuss ecosystems and the predator / prey concepts (i.e. more predators make it more difficult for prey).
- **Science:** Use different animals to emphasize seasonal change (e.g., squirrels gathering food for winter, bears preparing to hibernate, baby birds growing and requiring more food, etc.).