

M2C3 Planning Tool: Mathematizing the World Routine

Purpose: Mathematizing the world routines (MWR) build student observation and problem-posing skills. MWR can be used as a stand-alone routine or as part of a launch to answer a question posed by students.

Find a Hook: The key to planning a MWR is to find an image, video, or object that includes both mathematical features (e.g. invites counting, equal grouping, estimation, measurement) and contextual features that will hook student curiosities or connect to their lives. See example images: Ferris Wheel, Pumpkins, and Giant Crocodile.

Pose three questions to students:

- **What do you notice?** (builds observation skills)
- **What do you wonder?** (builds problem-posing skills)
- **What questions can be answered using mathematics?** (builds problem-posing skills for mathematics)

Record student responses to each question on poster, board, powerpoint or google slide, or document camera. Feel free to note that some of the wonderings could also be questions that could be answered using mathematics. Questions that might come up depending on the image may include: How much...? How many...? How long...? How fast/slow? How much more? How many different ...? Is there enough? See sample poster based on the giant crocodile image.

Math Strong

Notice

Crocodile big long, front feet thinner than the back feet (legs) long tail, spikey tail long in mouth, different colored Scales, seems as long as 10-20 ft. They are in the desert - maybe Africa 50 ft long, it has sharp teeth

Wonder

Are the people happy?
 How long is the log?
 Is it on a rock or log?
 How big are the teeth?
 Is it a dried pond? or a lake
 Why did they put it on rock/wood?
 Is it brown or yellow?
 How did it die?
 How long is the crocodile?
 How many people did it take to move it there?

Questions that could be answered w/ Math

How many people equal the length of the crocodile?
 How many spikes are on it?
 How many teeth does the crocodile have?
 How many squares (scales) does he have?
 How many trees/bushes are there?
 What time did they find the croc?
 How many pictures did they take?
 How many meters is it?
 How far away from Panton, WA?
 How many claws?
 How far away from their village?
 How many inches is the rock?
 How long has it been there?

Pursue a posed question. This step is optional but encouraged as it will yield high engagement and build math stamina. To start, students can consider what they **already know** that could help them to answer the question they posed, what they would **need to know or find out**, and what **assumptions or decisions** they might need to make. Structuring the discussion in this way helps students to identify the important quantities in the problem. When students identify an important quantity, but specific information about this quantity is not known or available, this leads students to make needed assumptions.

What do we already know?	What do we need to know or find out?	What assumptions or decisions do we need to make?