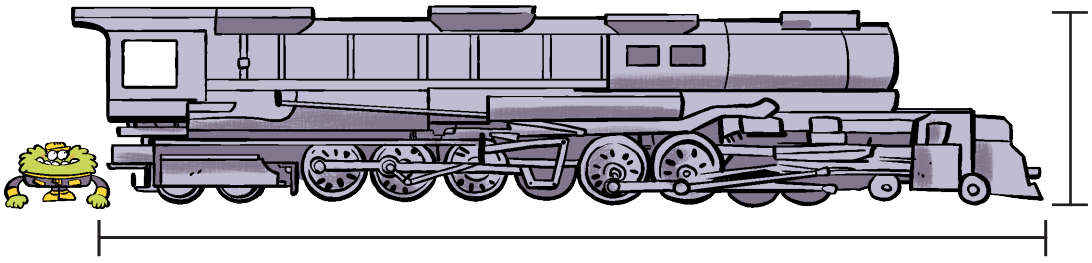
Length

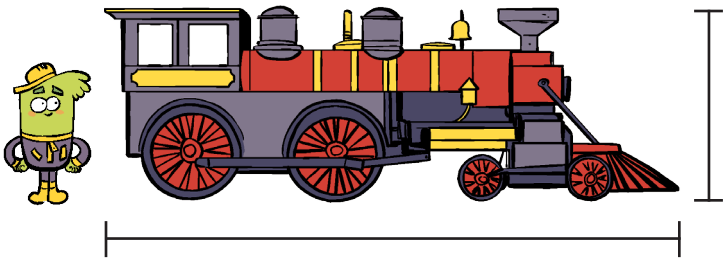
Estimate the length and height of each train. Then use a ruler to measure each train.

Amelia's Train



Estimated length: _____inches	Actual length: _____inches
Estimated height: _____inches	Actual height: _____inches

Brian's Train



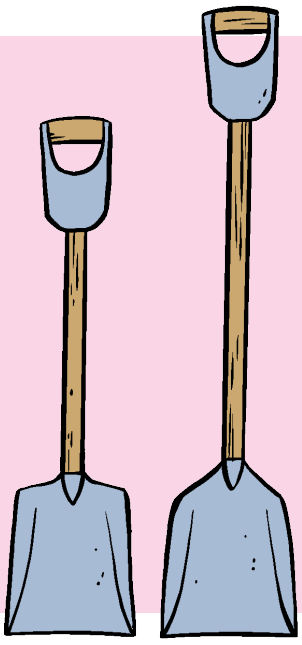
Estimated length: _____inches	Actual length: _____inches
Estimated height: _____inches	Actual height: _____inches

Which train is longer? _____

How much longer is the longer train? _____

Which train is taller? _____

How much taller is the taller train? _____

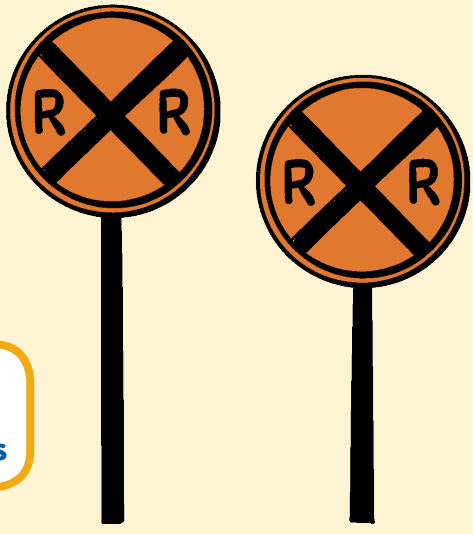


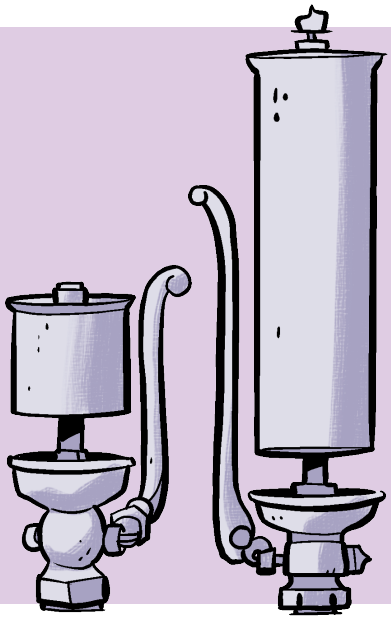
Amelia's shovel is 6 inches longer than Brian's. Brian's shovel is 52 inches long. How long is Amelia's?

_____inches

The crossing sign on Amelia's track is 10 centimeters shorter than Brian's. Brian's sign is 81 centimeters tall. How tall is Amelia's?

_____centimeters

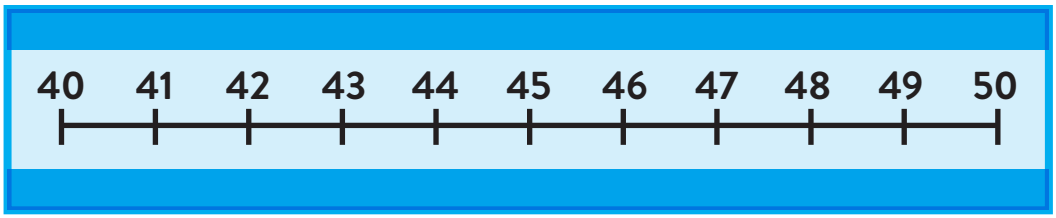




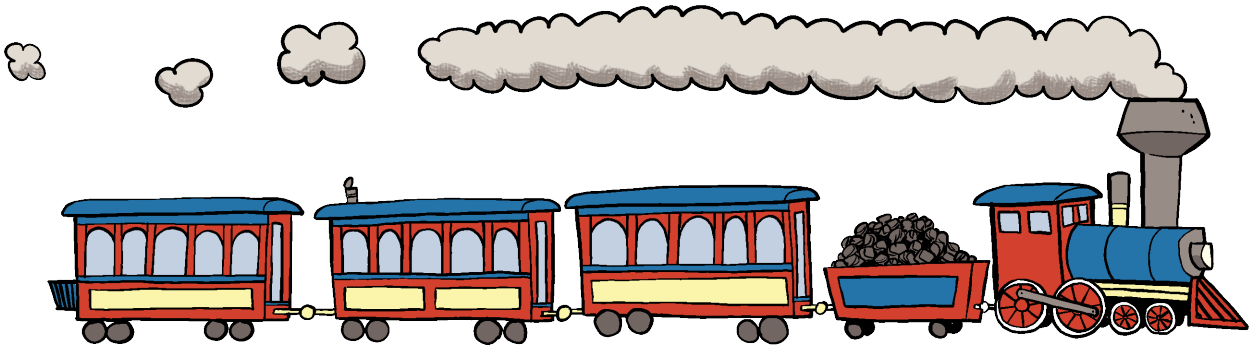
Amelia's steam whistle is 54 inches long. Brian's whistle is 14 inches shorter than Amelia's. How long is Brian's whistle?

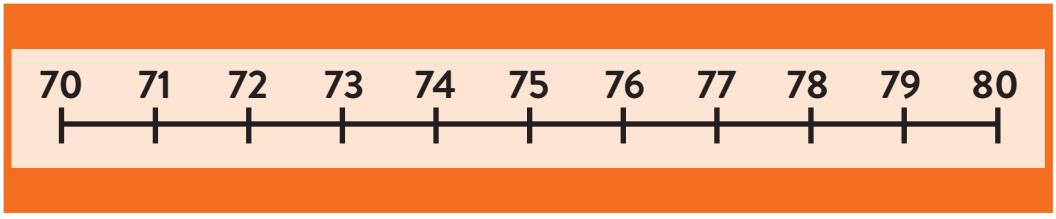
_____inches

Use the number lines to solve the following problems.

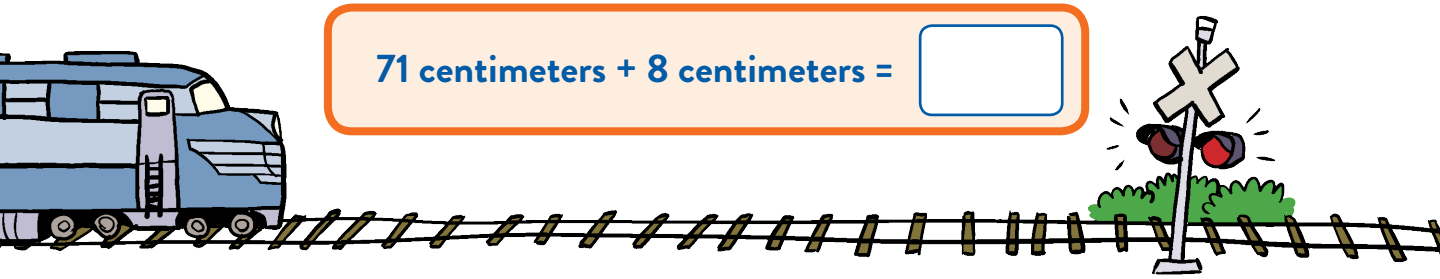


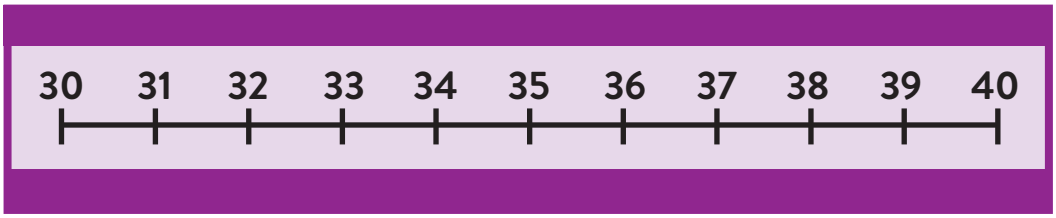
40 centimeters + 8 centimeters = ☐



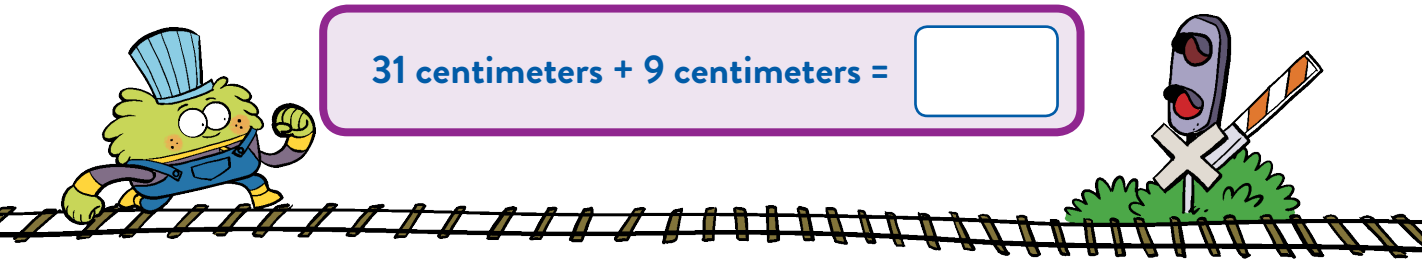


71 centimeters + 8 centimeters = ☐



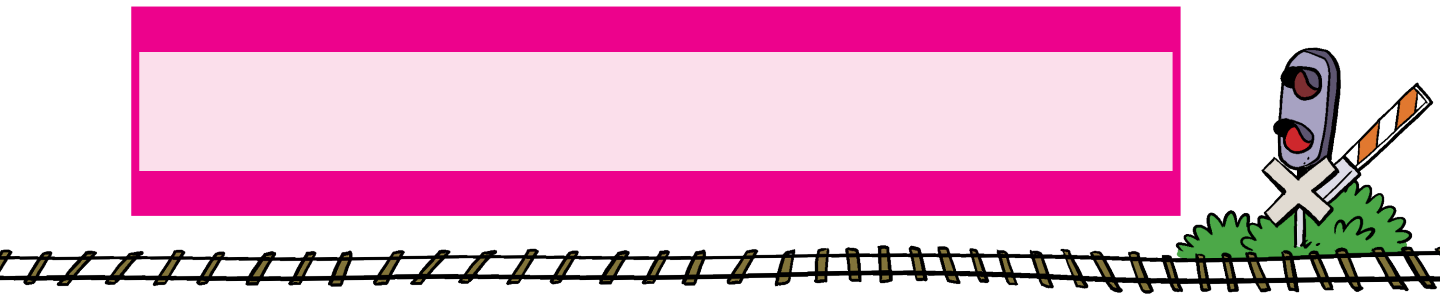


31 centimeters + 9 centimeters = ☐



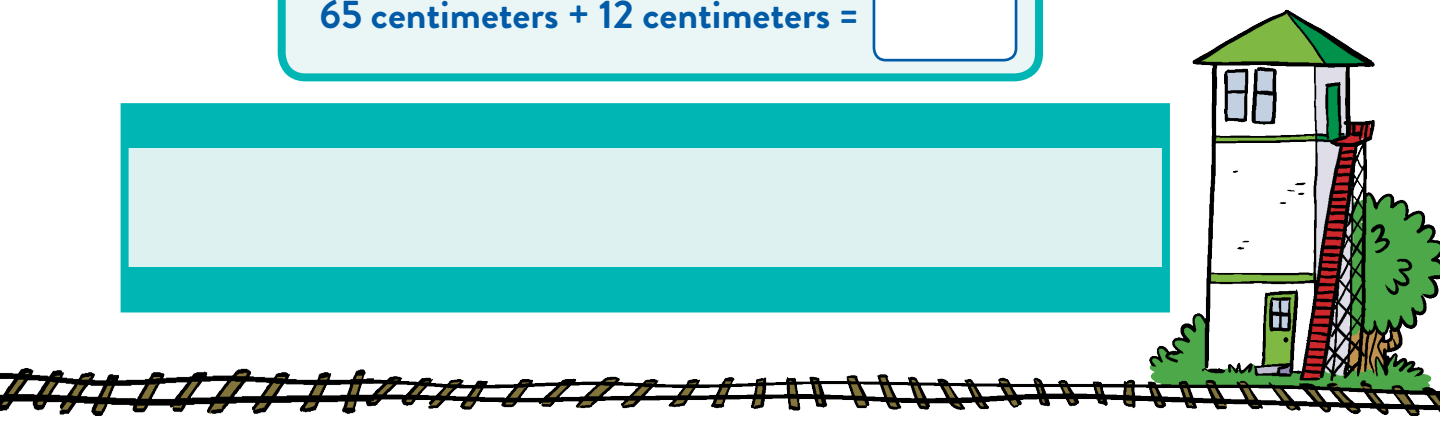
Draw number lines to solve the following problems.

31 centimeters + 16 centimeters = ☐



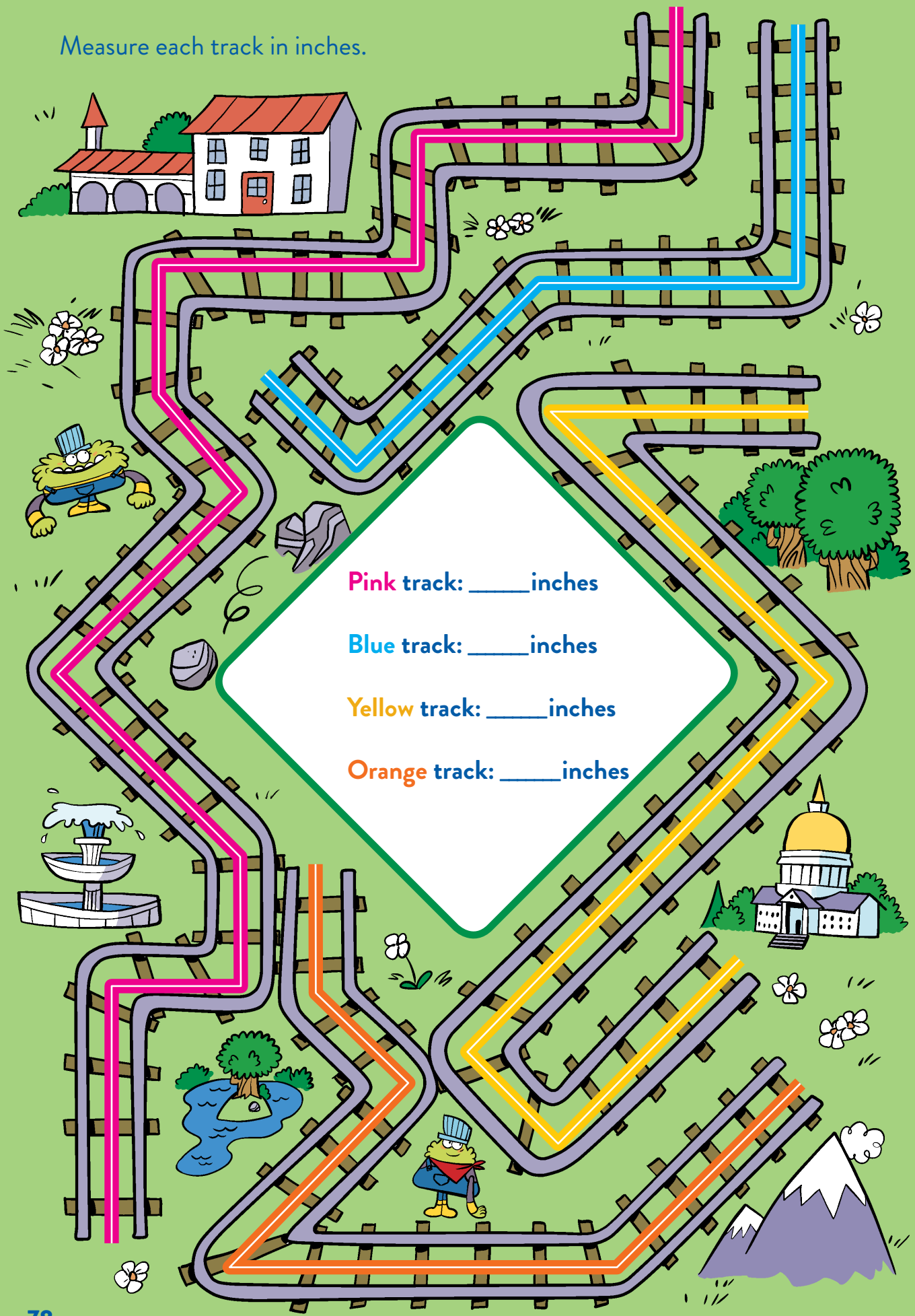
56 centimeters + 9 centimeters = ☐

65 centimeters + 12 centimeters = ☐



Get a few pencils and measure them. How long is the longest pencil? How long is the shortest pencil? How much longer is the longest pencil than the shortest?

Measure each track in inches.



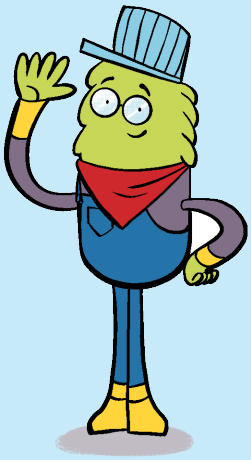
Pink track: _____inches

Blue track: _____inches

Yellow track: _____inches

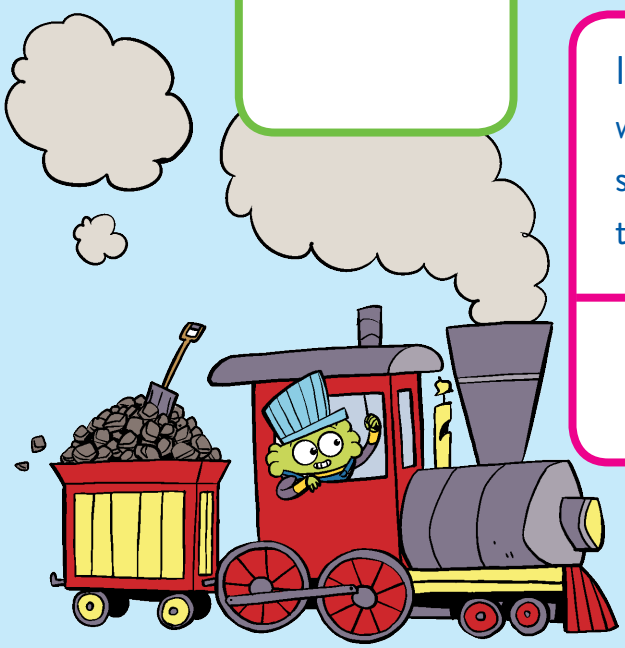
Orange track: _____inches

Which path is shorter, **pink** or **blue**?



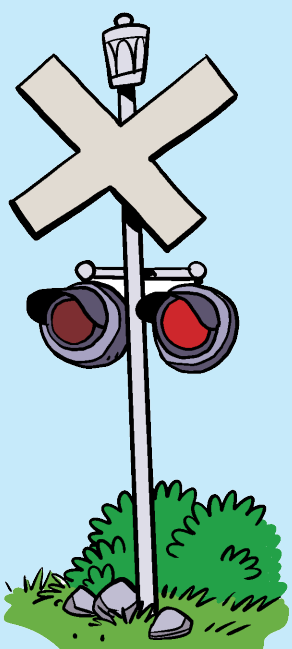
Which path is longer, **yellow** or **pink**?

How much shorter or longer is the **yellow** track than the **pink**?



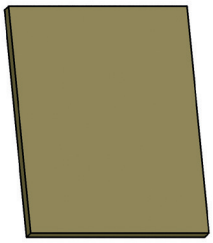
If Amelia took the **pink** path, and Brian waited for her to get exactly halfway before starting on the **blue** path, who would have the shorter distance left to walk?

How much shorter or longer is the **orange** track than the **blue** ?



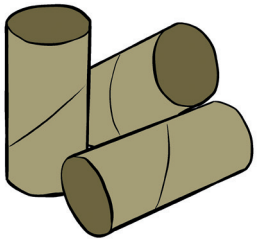
How much shorter or longer is the **yellow** track than the **orange**?

LET'S START! GATHER THESE TOOLS AND MATERIALS.



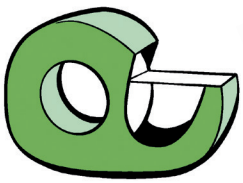
Cardboard

10–15 marbles



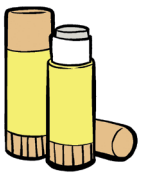
2 or more toilet paper or paper towel rolls

50 craft sticks



Tape

Scissors (with an adult's help)



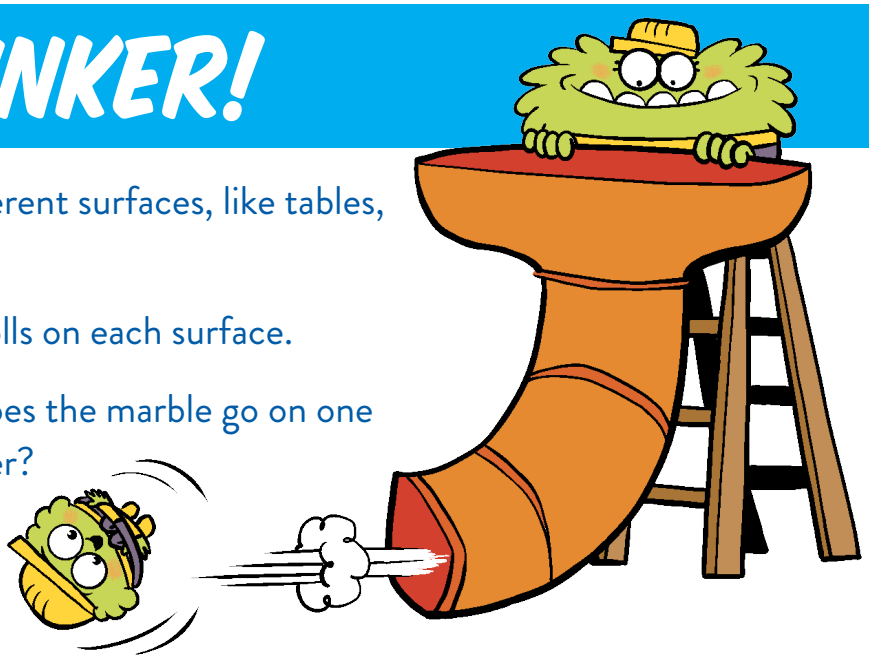
Glue sticks or glue gun

LET'S TINKER!

Roll a marble on different surfaces, like tables, carpets, and tile.

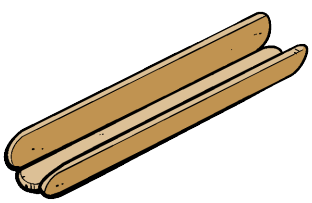
Measure how far it rolls on each surface.

How much farther does the marble go on one surface versus another?

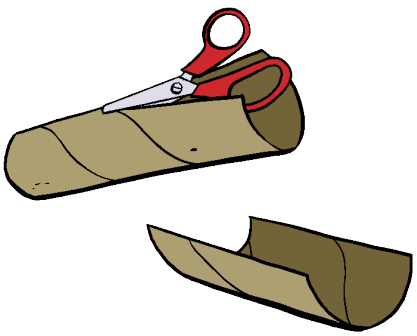


LET'S MAKE: MARBLE RUN!

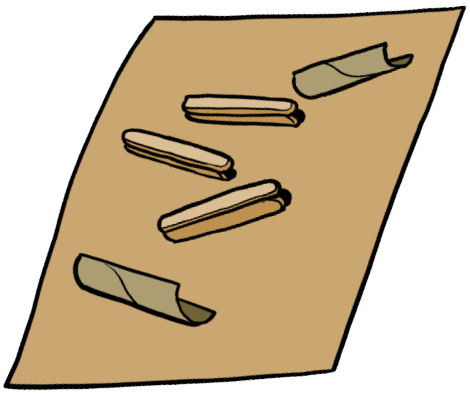
1. Glue craft sticks together to make trays.



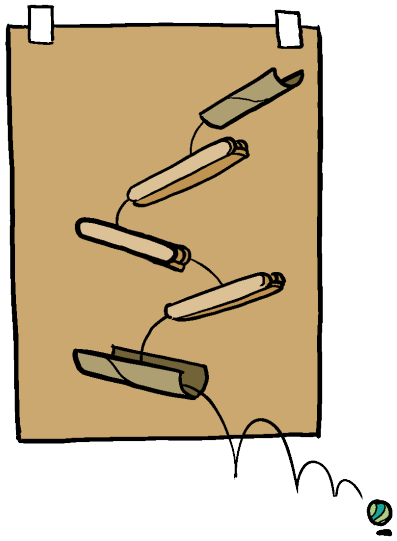
2. Cut toilet paper rolls to create more trays.



3. Glue or tape the trays to cardboard to create the run.



4. Tape the cardboard to a wall and test your marble run!



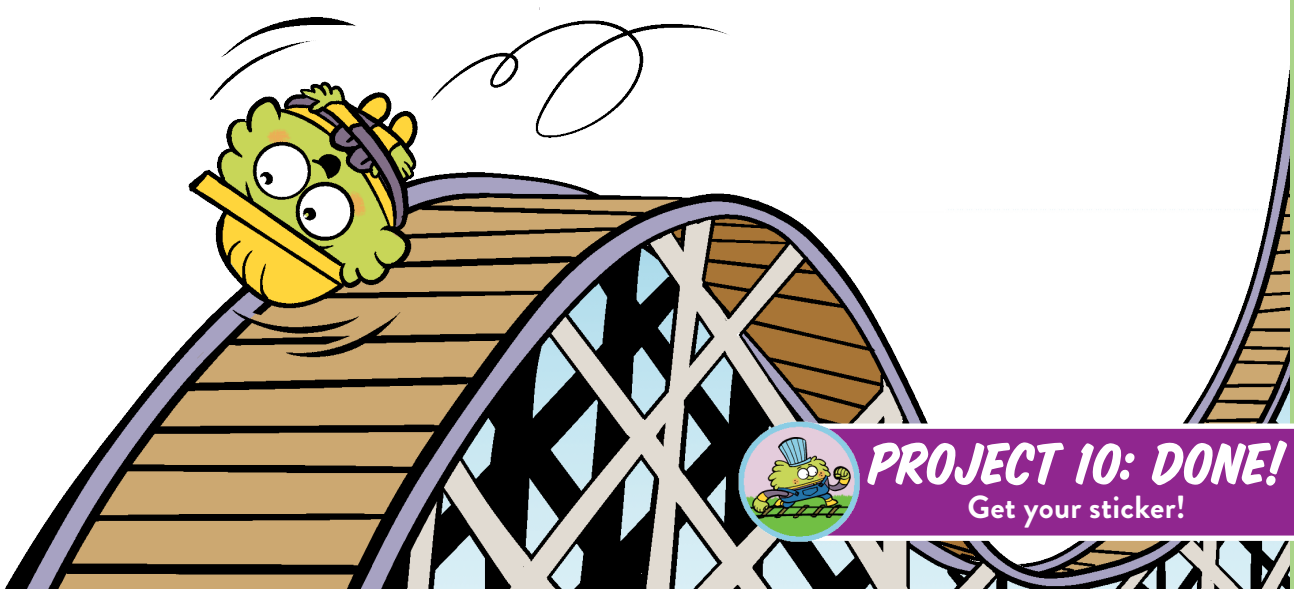
How long is your marble run? Measure each tray and add the lengths.

LET'S ENGINEER!

Enid is perfectly round, and that makes her perfectly suited for the MotMot Marble Madness Marathon. She wants to go at least 100 centimeters.

How can Enid roll more than 100 centimeters?

Extend your run so a marble can travel more than 100 centimeters. Remember, if a marble drops from one tray to another, you can count the distance between the trays.



PROJECT 10: DONE!
Get your sticker!