

Reaction Time

Thank you for downloading the science and mathematics activity packet! Below you will find a list of contents with a brief description of each of the items. This activity packet contains all the information (including any handouts) you will need to run this activity in your own classroom or at a science festival.

Please note: some activities might require the need for a facilitator to be present to oversee the activity. Activities that require a facilitator will be clearly noted.

-Community Resources for Science



ACTIVITY PACKET CONTENTS

1. Organizer instructions for the person running the activity
 - Print suggestion: 1 for the facilitator
 - Includes information for setup prior to the event (e.g., materials prep)
2. What's Going On? (tabletop sign/printout)
 - Print suggestion: 1 to put in a plastic sign holder
 - Tabletop sign that explains the science behind the activity
 - Includes Questions to Think About for participants during the activity
3. Participant Instructions (tabletop sign/printout)
 - Print suggestion: 1-2 to put in a plastic sign holder
4. Activity Printout(s) for participants
 - Print suggestion: number of expected participants at event
 - Printouts needed for participants to do the activity
5. Take home sheet for participants
 - Print suggestion: number of expected participants
 - Easy-to-follow instructions for participants to try the activity at their homes



Reaction Time

ORGANIZER INSTRUCTIONS

Grade(s): K-5

Objective: Measure students' reaction time by how quickly they catch a dropped object

Activity overview and background: Students will measure their reaction time, with the help of a partner, based on where they catch a dropped ruler

Materials:

- Chair(s)
- Ruler(s) with centimeter marks
- Table
- Pens or pencils for charting results
- Reaction Time Chart (printout)
- Reaction time trial handouts

Setup:

1. Print out as many Reaction Time Trial handouts as expected for the number of participants
2. Put the Reaction Time Chart in a plastic sign holder, or set up on the table for the participants to easily view

Suggested Activity:

- You could have multiple chairs and rulers available so several participants can do the activity at the same time

<http://pbskids.org/zoom/activities/sci/reactiontime.html>



What's Going On?

Has anyone ever said, "Think fast!" and then thrown something at you? How quickly or slowly you react is called your reaction time.

When you caught the ruler, your reaction time is how long it took for your eyes to tell your brain that the ruler was falling and then for your brain to tell your fingers to catch it!

Questions to Think About

- Who had the best reaction time?
- Did your reaction times improve with practice?
- Did your reaction times vary a lot, or were they pretty much the same from trial to trial?
- Are older kids faster than younger kids?
- How about your parents?

Instructions

***Activity requires 2 people**

1. To measure your reaction time, ask a friend or parent to help
2. Sit in a chair with your arm resting on a table so that your wrist hangs off the edge
3. Your friend will hold one end of the ruler so that it dangles above your hand
 - Make sure the end of the ruler is hanging between your friend's thumb and finger
4. Have your friend countdown and then drop the ruler
 - When your friend lets go of the ruler, try to catch it between your thumb and finger as quickly as you can
5. Compare the marking on the ruler where your fingers caught it to the Reaction Time Chart
6. Mark and X on your graph next to the matching reaction time in the Trial 1 column of the reaction time handout
7. Try catching the ruler twice more, marking the results on your table each time
8. Switch places with your friends so they can test their reaction times!

Reaction Time Chart

Distance on Ruler	Reaction Time
5 centimeters	0.10 seconds
10 centimeters	0.14 seconds
15 centimeters	0.18 seconds
20 centimeters	0.20 seconds
25 centimeters	0.23 seconds
30 centimeters	0.25 seconds

Reaction Time

ACTIVITY PRINTOUT(S)

Distance on Ruler	Reaction Time			
30cm	0.25 sec			
25 cm	0.23 sec			
20 cm	0.20 sec			
15 cm	0.18 sec			
10 cm	0.14 sec			
5 cm	0.10 sec			
		Trial 1	Trial 2	Trial 3

Distance on Ruler	Reaction Time			
30cm	0.25 sec			
25 cm	0.23 sec			
20 cm	0.20 sec			
15 cm	0.18 sec			
10 cm	0.14 sec			
5 cm	0.10 sec			
		Trial 1	Trial 2	Trial 3

Reaction Time

TRY IT AT HOME!

Materials:

- Chair
- Table
- Ruler(s) with centimeter marks
- Pen or pencil for charting results

Instructions: *Activity requires 2 people

1. Sit in a chair with your arm resting on a table so that your wrist hangs off the edge
2. Your friend will hold one end of the ruler so that it dangles above your hand
3. Have your friend countdown and then drop the ruler
4. Try to catch the ruler between your thumb and finger as quickly as you can
5. Compare the marking on the ruler where your fingers caught it to the Reaction Time Chart
6. Mark and X on your graph next to the matching reaction time in the Trial 1
7. Try catching the ruler twice more, marking the results in Trial 2 and Trial 3

Distance on Ruler	Reaction Time			
30cm	0.25 sec			
25 cm	0.23 sec			
20 cm	0.20 sec			
15 cm	0.18 sec			
10 cm	0.14 sec			
5 cm	0.10 sec			
		Trial 1	Trial 2	Trial 3