Name: _____ Date: _____

The Ruler Drop Reaction Test

Circle group

Here is a quick test. You need a friend and a plain ruler. It shows how fast your body reacts.

Your friend holds the ruler at the top. It hangs straight down. You hold your thumb and finger open at the bottom. The zero mark is level with the top of your fingers. Do not touch the ruler. Your friend drops it with no warning. You catch it fast. Then look at the number where your fingers closed. That number shows how far the ruler fell.

A short fall means a quick reaction. A long fall means a slower one. The ruler does not care how strong you are. It only shows how long your body took.

A lot happens in that tiny moment. Your eyes see the ruler move. They send a message to your brain. Your brain says to close your hand. Then a message goes along nerves to your finger muscles. Each step takes a little time.

Try it a few times. Your scores will change. Being tired can make the ruler fall farther. Trade places with your friend and compare scores.

Questions

1. What do you need to do the ruler drop test?

_____

_____

2. What does the number where your fingers closed show?

_____

_____

3. What does a short fall mean?

_____

_____

4. Why does your friend drop the ruler with no warning?

_____

_____

5. What happens after your eyes see the ruler move?

_____

_____

6. Why might your scores change from try to try?

_____

_____

Words to know

reaction: the way you act right after something happens
level: at the same height as something else
muscles: body parts that tighten to make you move
compare: to look at two things to see how they differ

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Ruler Drop Reaction Test

Triangle group

Here is a quick experiment that you can try with a friend and a plain wooden or plastic ruler, and it measures how fast your body reacts.

Have your friend hold the ruler up by its top end so it hangs straight down. Hold your thumb and finger open at the bottom, with the zero mark level with the top of your fingers. Do not touch the ruler. Your friend lets go without any warning, and you catch it as fast as you can. Then look at the number where your fingers closed, because that number tells you how far the ruler fell before you grabbed it.

A short fall means a quick reaction. A long fall means a slower one. The ruler does not care how strong you are. It only shows how long your body took to act.

An amazing amount happens in that tiny moment. Your eyes see the ruler move and send a message to your brain, and your brain decides to close your hand. Then another message travels along nerves to the muscles in your fingers, and each step takes a little time, even though it feels instant.

Try the test a few times. Your results will probably change from try to try. Being tired or looking away can make the ruler fall farther. Switch places with your friend and compare your scores.

Questions

1. What do you need to do the ruler drop test?

_____

_____

2. What does the number where your fingers closed tell you?

_____

_____

3. What does a short fall of the ruler mean?

_____

_____

4. Why does the friend let go without any warning?

_____

_____

5. What happens in your body after your eyes see the ruler move?

_____

_____

6. Why might your scores change from one try to the next?

_____

_____

Words to know

reaction: the way you act right after something happens
level: at the same height as something else
muscles: body parts that tighten to make you move
instant: happening right away, with no wait at all
compare: to look at two things to see how they differ

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

The Ruler Drop Reaction Test

Square group

Here is a simple experiment that you can attempt with a friend and an ordinary wooden or plastic ruler. It measures how quickly your body is able to react.

Ask your friend to hold the ruler by its top end so that it dangles straight down. Hold your thumb and finger open near the bottom, with the zero mark level with the top of your fingers, and be careful not to touch the ruler. Your friend releases it without any warning, and you catch it as quickly as you can. Then examine the number at the spot where your fingers closed. That number reveals how far the ruler dropped before you grabbed it.

A short fall indicates a quick reaction, while a long fall indicates a slower one. The ruler does not care how strong you are. It simply shows how much time your body needed in order to act.

An astonishing amount happens during that tiny moment. Your eyes notice the ruler beginning to move and send a message to your brain. Your brain decides that your hand should close, and then another message travels along your nerves to the muscles in your fingers. Each step takes a little time, even though the whole thing feels instant.

Repeat the test several times, and you will probably notice that your results change from try to try. Being tired or looking away can make the ruler fall farther. Switch places with your friend and compare your scores.

Questions

1. What materials do you need to carry out the ruler drop test?

_____

_____

2. What does the number at the spot where your fingers closed reveal?

_____

_____

3. What does a short fall of the ruler indicate?

_____

_____

4. Why does your friend release the ruler without any warning?

_____

_____

5. What happens inside your body after your eyes notice the ruler move?

_____

_____

6. Why might your results differ from one try to the next?

_____

_____

Words to know

reaction: the way you act right after something happens
level: at the same height as something else
muscles: body parts that tighten to make you move
instant: happening right away, with no wait at all
compare: to look at two things to see how they differ

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: The Ruler Drop Reaction Test

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: The Ruler Drop Reaction Test

Easier · 185 words · Flesch-Kincaid grade 1.2

1. A friend and a plain ruler.
2. How far the ruler fell before you caught it.
3. A quick reaction.
4. So you cannot guess when to grab and have to react to what you see.
5. A message goes to the brain, the brain decides, and a message goes along nerves to the finger muscles.
6. Being tired or looking away can slow you down.

Triangle: The Ruler Drop Reaction Test

This passage · 228 words · Flesch-Kincaid grade 4.4

1. A friend and a plain wooden or plastic ruler.
2. How far the ruler fell before you caught it.
3. A quick reaction.
4. So you cannot guess when to grab and have to react to what you see.
5. A message goes to the brain, the brain decides, and another message goes along nerves to the finger muscles.
6. Things like being tired or looking away can slow you down.

Square: The Ruler Drop Reaction Test

Harder · 246 words · Flesch-Kincaid grade 6.1

1. A friend and an ordinary wooden or plastic ruler.
2. How far the ruler dropped before you grabbed it.
3. A quick reaction.
4. So you cannot predict the moment and must react to what you see.
5. A message goes to the brain, the brain decides, and another message travels along nerves to the finger muscles.
6. Being tired or looking away can slow your reaction.