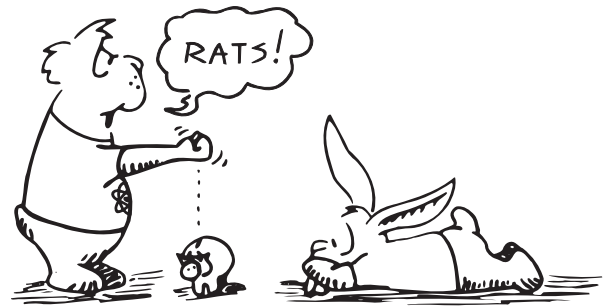


It takes time for information to get from one part of your body to another. You see a ball coming straight toward you. How quickly can you duck? Test your reaction time.

**MATERIALS:** Ruler; coin.

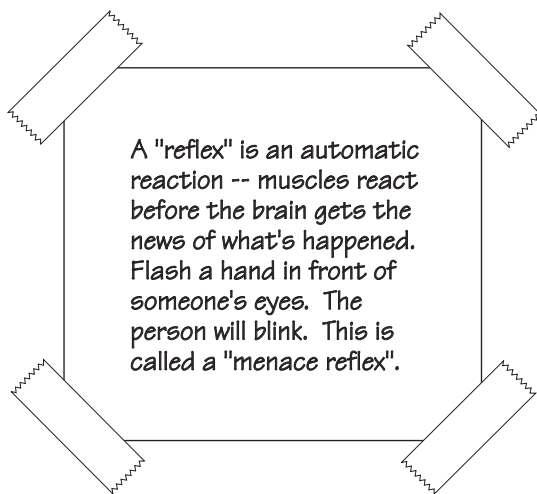
### DOING IT:

**1. Ruler Drop:** Hold a ruler just above a partner's open thumb and index finger, with the lowest number on the ruler at the bottom. Drop the ruler without warning. At what number on the ruler does your partner catch the ruler? This number is a measure of reaction time. Who has the fastest reaction time (smallest number)? Does reaction time change when the cue is sound rather than sight? Have your partner close his or her eyes and wait for a sound you make (e.g. tongue click) just as you let the ruler go. How does reaction time change when the cue is touch? Have your partner close his or her eyes again. This time, touch his or her arm lightly with your finger just as you let go of the ruler. Does practice improve reaction time? Does the hand which is used make a difference? Make sure you always do the test in the same way: hold the ruler at the same distance above the fingers before you let it go; the fingers should always be the same distance apart (use the ruler's width to separate the fingers the same amount each time; then turn the ruler so that the flat part will be pinched)



**2. Coin Grab:** Hold one arm straight in front of you, palm down. Put a coin in the centre of the back of your hand. Slowly tilt your hand so the coin starts to slide off. Then quickly flip your hand around to catch the coin as it falls. How many times can you catch the coin in five attempts? Do you get better with practice? How does the reaction time of your left hand compare to your right hand?

**3. Slapper:** Start with one-hand slapper. Hold your right hand out (palm up) while your partner lightly rests his or her left hand (palm down) on your hand. The idea is for you to turn over your hand and slap the back of your partner's hand before he or she can remove his or her hand. After you've tested your right hand, try your left hand. When you've mastered one-hand slapper, try two-hand slapper (hold both hands palms up, while your partner covers them with his or her hands palms down). When you're doing either slapper test, *take off any rings or bracelets and don't slap too hard.*



The time between when your body senses something (e.g. your eyes see a ball coming toward you and send the information to your brain) and when you actually act (e.g. your brain tells your body to bend and duck) is called "reaction time". Different people have different reaction times and, in general, young people have faster reaction times than older people. The sense signal to which people react also makes a difference to their reaction time. Most people can speed up their reaction time with practice.

**Topics:** Senses; Brain; Scientific Method.

