

*See!*

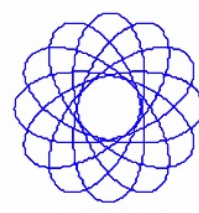
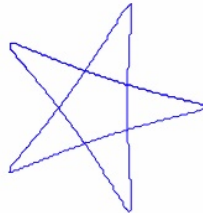
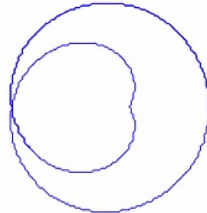
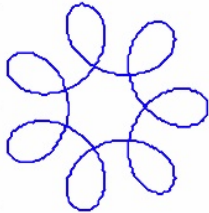
*Feel!*

*Try!*



# Tea Cups

Find the Teacup ride. Watch for a while and see how it moves!  
Do you see that the whole floor moves clockwise, while the three "trays" (each with three cups) move counterclockwise?



Try to follow the motion for *one* of the cups?  
Which of the drawings gives the best description  
Where during the ride do you move the fastest?  
Where do you move the slowest?



Time to try the ride and feel the forces on (and in) your body.  
Where during the ride does the TeaCup press most on your body?  
(That will be when the motion *changes* most, i.e. when the *acceleration* is largest)

If you ask very kindly, you may be allowed to bring a *small* cuddly animal in a *short* string.  
Hold the animal on a string over the table and see it move during the ride. (You must promise not to drop it!)  
How much it moves depends on the acceleration. You can also try it in a bus or in a car on the way home.



# Wave Swinger

Watch the Wave Swinger at rest. All swings hang straight down.

Which swings do you think will form the largest angle when the ride starts? Do you think that the empty swings will hang out the most or till it be a swing with a very heavy adult?



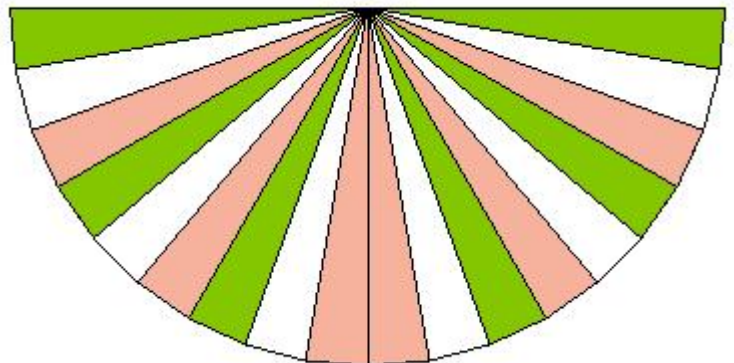
The swings hang out because a sideways force from the chain is needed to change the motion - otherwise the swings would just continue forward in a straight line.

In amusement parks, the largest and most common acceleration are those that change the direction of motion without necessarily changing the speed.



How large is the acceleration? This can be measured with a protractor.

If the acceleration had been straight ahead (e.g. when a car starts)  $10^\circ$  (one field) would correspond to reaching 50 km/h in 8 seconds.





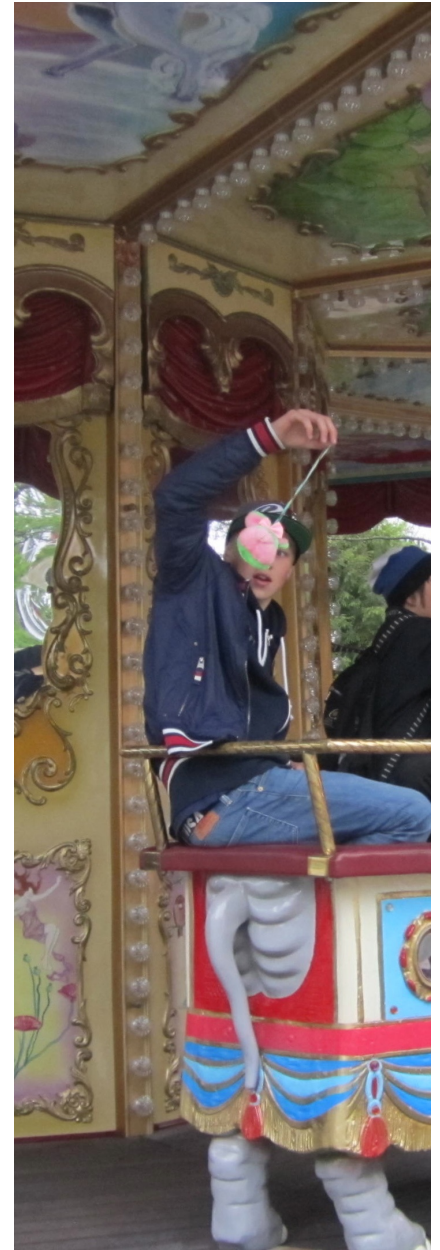
# Classic Carousel

Get out your little cuddly toy animal on the string and let it swing while the carousel moves.

Hold the string in one hand. Pull the toy to the side and let go. Hold your hand still while looking at the swinging toy.  
(If it stops - restart it)

Do you notice that it seems to change direction, e.g. in relation to the elephant. It actually continues in the same direction (compared to the ground)  
Try to start the swinging in different directions.

Read more:



*For you, who visit an amusement park with young children,  
and want to investigate and experience the rides in a new way.*