

## 8

## Carts &amp; Wheels

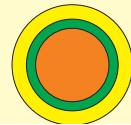
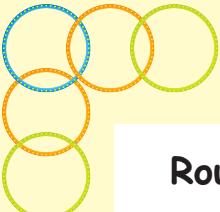


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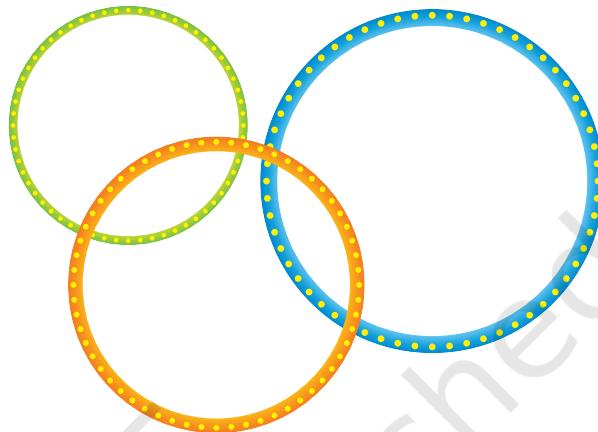
You must have seen many such round things around you.

List some more in your notebook.



## Round Bangle

Have you ever gone to a bangle shop?



\* Guess which of these bangles is of your size.

- \* Take a wire and make a bangle for yourself. Can your madam or mother wear this bangle? \_\_\_\_\_
- \* A bangle can be used to trace a circle. What are the other things around you that you can use to trace a circle?

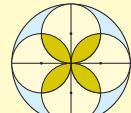
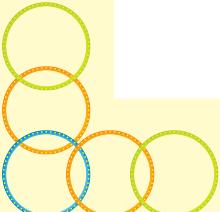
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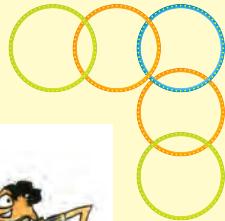
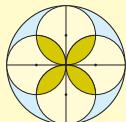
\_\_\_\_\_

- \* Trace a circle with the help of some of these things in your notebook or on the ground.

Which thing makes the smallest circle?

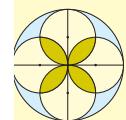
Which thing makes the biggest circle?



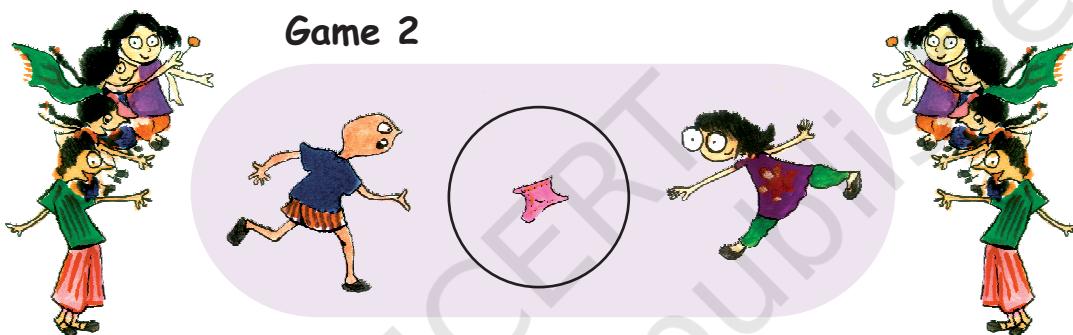


## Games with Circles

Children are playing some games .....



## Game 2



Do you play these games?

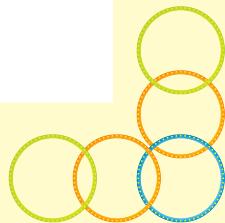
Which song do you sing when you play these?

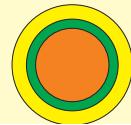
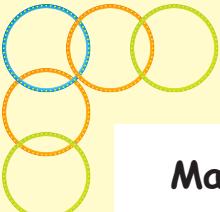
Play these games in your school.

Why do we make a circle in each of these games ?

What if a rectangle was made? Discuss.

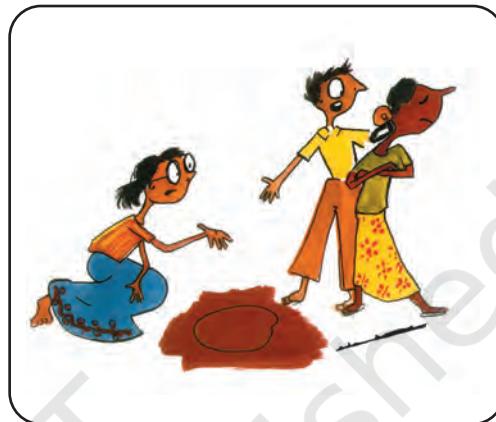
- \* Think of some other games you play by making circles.





## Making a Circle

Naina, Chippu and Ariba want to play a game. They want to make a big circle on the ground. But they cannot make it by tracing. So, Ariba tries to draw a circle with a stick.



Chippu and Naina — It does not look like a circle at all.

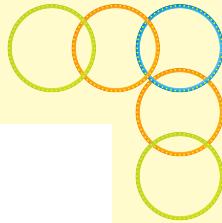
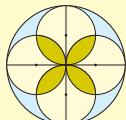
Ariba — OK! Why don't both of you try?

Chippu and Naina both make circles on the ground.



- \* Is any of these a good drawing of a circle? Discuss.
- \* Can you draw a circle on the floor with a chalk? Try.
- \* Also draw a circle in your notebook using a pencil.
- \* Look at the circles drawn by your friends. Who has drawn the best circle?

The purpose of this exercise is to give opportunities to each child to make freehand circles. They can also make circles on the ground with a stick. They can compare different drawings to get an intuitive sense of the shape of a circle.



## Making a Circle with a Rope

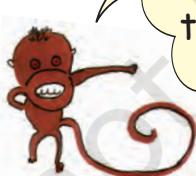
Ariba decided to use nails and a thread to make a circle on the ground. She took a thin rope and tied nails on both ends of the rope. Then she made a circle with the help of her friend. Look at the picture and see how they are making the circle.



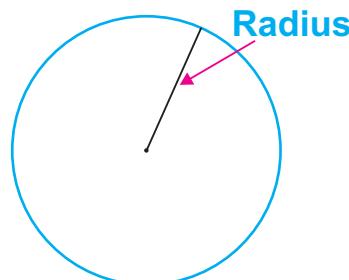
Can you also make a circle with a rope and nails like Ariba?



- \* Do the activity in small groups. Each group should take a rope of a different length. See the circles made by different groups.
- \* Which group made the smallest circle? \_\_\_\_\_  
How long was their rope? \_\_\_\_\_
- \* Does a longer rope make a bigger circle? \_\_\_\_\_  
Why is it so?

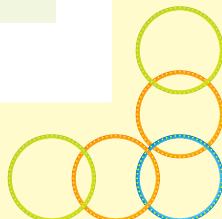


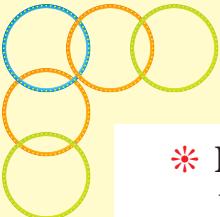
The length of rope used is equal to the length of the radius of the circle.



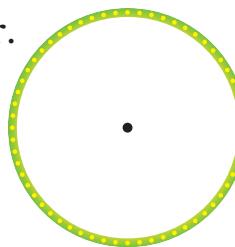
- \* What was the radius of the smallest circle? \_\_\_\_\_

The purpose of this exercise is to help children make different circles, measure the lengths of their radii and see how the size of a circle changes with its radius.





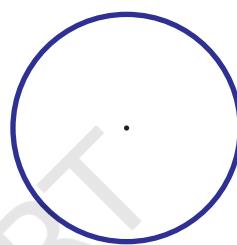
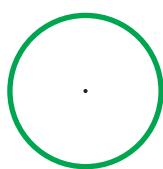
- \* Draw the radius of this bangle using a ruler.  
Measure the length of the radius.



Now see what your friends have drawn. Discuss the length of the radius they measured. Is it the same as yours?

- \* Draw the radius of these circles.

Guess which circle has the longer radius. \_\_\_\_\_



Measure the radius of both the circles using a ruler.

Write the length of their radius.

\* Radius of the green circle \_\_\_\_\_

\* Radius of the blue circle \_\_\_\_\_

### **Find out**

- \* Measure the radius of the wheels of a bicycle or a bullock-cart.  
You can use a thread or a measuring tape.

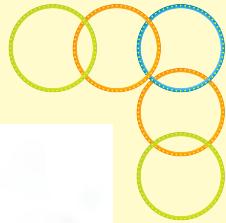
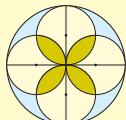
Are all the wheels of a bicycle or a bullock cart of the same radius? \_\_\_\_\_

\* Have you seen a tractor or a road roller?

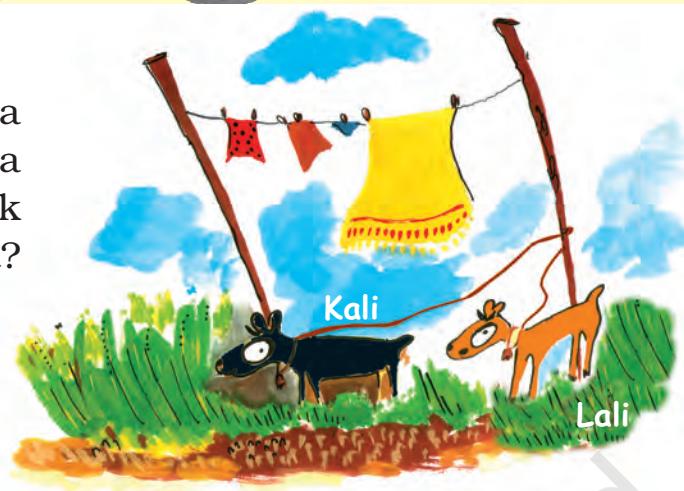
\* Which is the biggest wheel you have ever seen?

\* Are all wheels of a tractor or road roller of the same radius?

Children need a lot of interesting exercises of making and measuring the radius of circles of different sizes. They can also make wheels and carts.

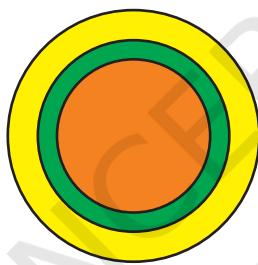
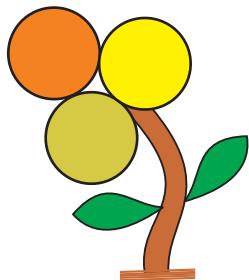


- \* Lali and Kali are tied to a pole with ropes. Kali has a longer rope. Who can look for more grass to eat?

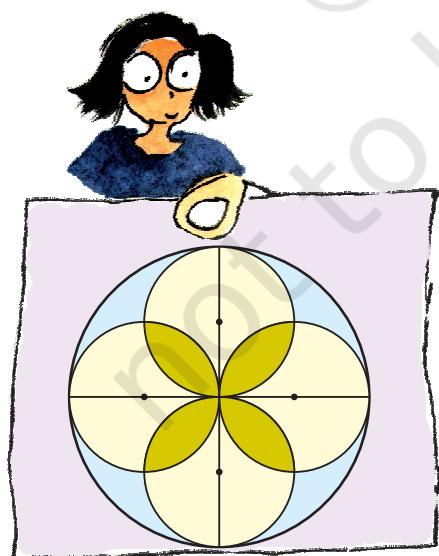


### Daljeet's Design

Daljeet has made these designs using a compass.

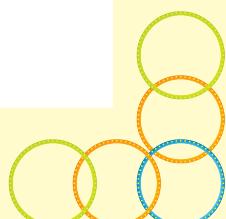
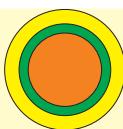


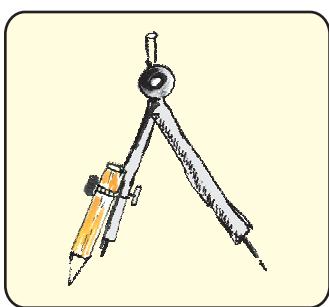
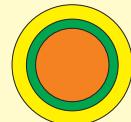
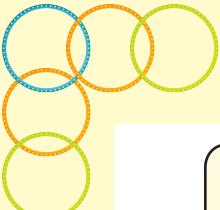
His sister came and started making more designs with him.



Do you want to make such designs?

To make such designs you will need  
to use a compass.





### Using a Compass

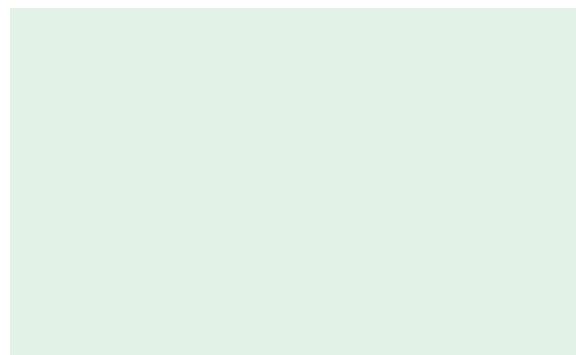
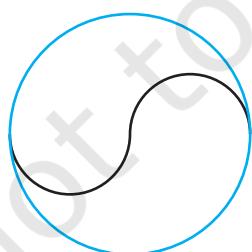
- \* Have you seen a compass before? How will you use this to make a circle?
  - Open your compass.
  - Press the tip of the compass on the paper. Hold the compass from the top.
  - Without moving the tip, try to move the pencil around.
  - Do you get a circle?

Look for a mark where you had kept the tip of the compass.

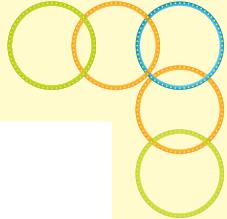
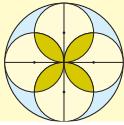
This mark is the **centre** of your circle.

- \* Is this circle better than the one you made earlier without a compass? Draw the radius of this circle and measure it.
- \* Now you can make your own designs like Daljeet had made. How many did you make?

Guess how this design has been made. Use a compass to make a similar one in the box.



Encourage children to explore their own designs with a compass. This will also give them more practice in drawing circles with a compass.

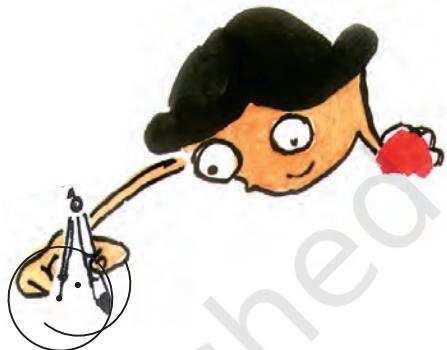


## Is It a Circle?



Naina was making a circle.

Ravi asked her for an eraser. She kept her compass and gave him the eraser. Then she started again to complete her circle. But she got this.

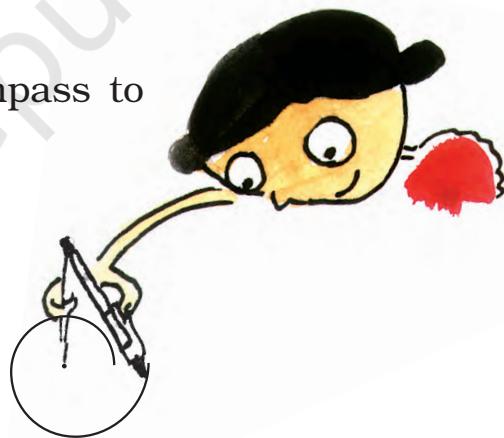


### Guess

\* Why did Naina get such a drawing? Discuss.

Can a circle have more than one centre?

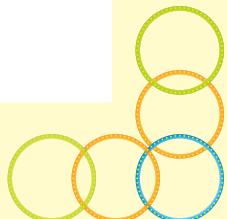
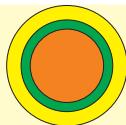
Another day Naina was using a compass to make circle. But it came out like this.

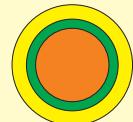
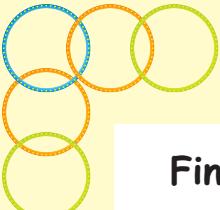


\* Did any one of you ever get a shape like Naina's?



Oh! The screw of the compass is loose... Let me tighten it... Now my compass will not slip...





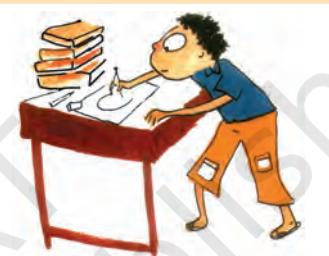
## Find the Centre

Sadiq and Sameena want to make circles for themselves.

I will make it with a compass.



No, I will trace it with a bangle.



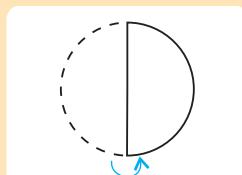
Then they cut their circle.

See, my circle has a centre. But where is the centre of your circle?

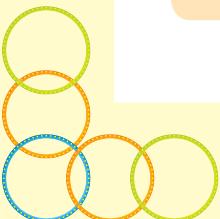
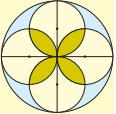
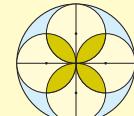


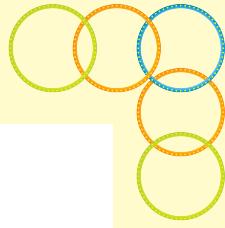
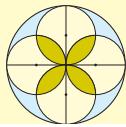
Don't worry. See how I find it.

She folded her circle into half.

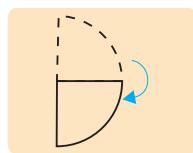


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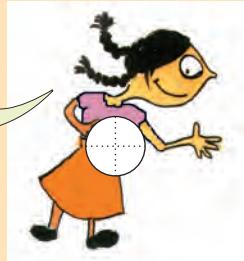


Then she folded it again like this.

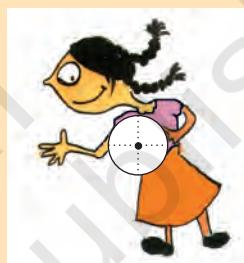


She opened the folded circle.

Can you see the two creased lines crossing each other?

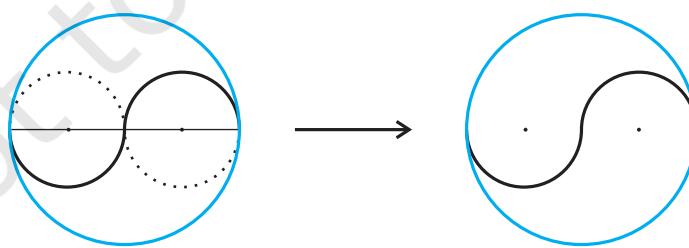


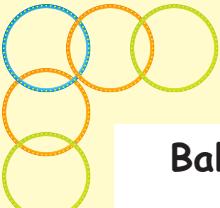
See, I put a point where these lines cross. This is the centre of my circle.



- \* Now you trace a circle on a paper using a bangle. Cut it. Then find its centre like Sameena did.

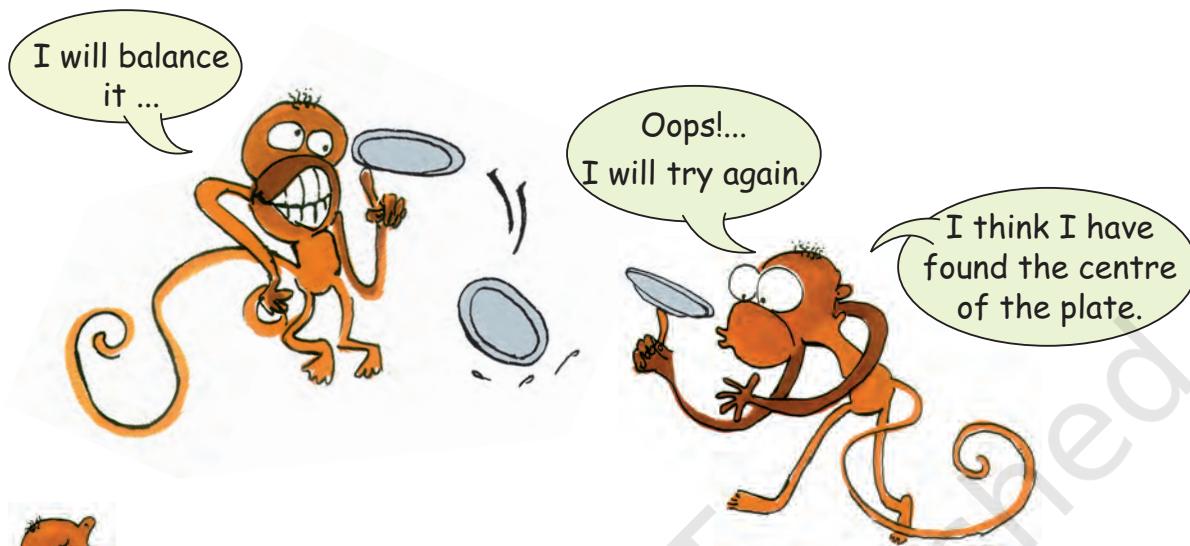
We can also make the design on page 88 like this. How did you do it?





## Balancing Act

Can you balance a plate on your finger?



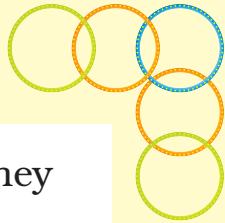
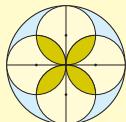
You also try to balance a plate or a round lid on your finger.  
Where does it balance?

## Spin the Top



Zakir, Appu, Naina and Guddo were getting bored. It was raining.  
So they could not go out to play.

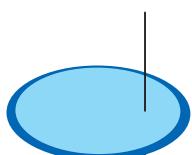
Suddenly Appu said — Let's each make a top.



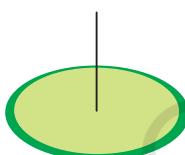
They took a piece of cardboard traced a circle on it. Then they made a hole and put a matchstick in it.



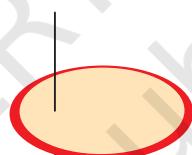
Now everybody was excited to spin their tops which looked like this.



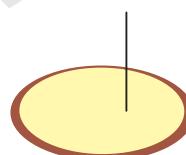
Zakir



Appu



Naina



Guddo

### Guess

- \* Whose top will not spin at all? \_\_\_\_\_
- \* Whose top will spin a little? \_\_\_\_\_
- \* Whose top will spin the best? \_\_\_\_\_
- \* In whose top is the stick nearest to the centre? \_\_\_\_\_

### Make Your Own Top

You also make your own top and play this game.

- \* To make the top spin well, where will you make the hole?

