Paralympic Power

You need ★ access to the Internet ★ classmates

TECHNOLOGY **Top athletes use technology to help them train and compete. Without modern technological products, some athletes could not compete at all.**

Activity One

Jayna is watching the Paralympics on television. The first event is a track event. She notices that the wheelchairs used for racing are very different from ordinary wheelchairs.

1. a. Compare the wheelchair used for a 100 metre (m) race with an ordinary wheelchair. In what ways are they similar? How are they different?

   b. Discuss with a classmate possible reasons for the differences.

2. In some wheelchair events, it is stability that is most important; in others, it is speed or the ability to turn easily (manoeuvrability).

   a. Discuss with a classmate which factor is most important for the events listed in the table below.

   b. For each event, divide 9 points between the 3 factors to show how important you think they are.

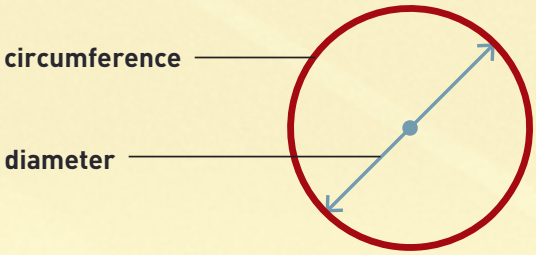
Event	Stability	Speed	Manoeuvrability
Basketball			
100 m race			
Tennis			
Marathon			
Archery			

   c. Ask some classmates how they divided the 9 points. Discuss any differences.

   d. Use the Internet to find examples of wheelchairs used for each event in b. What design features do you notice?

3. The rear wheels of a racing wheelchair are large; the hand wheels are much smaller. Jayna's Uncle Dhruv is a wheelchair athlete. The rear wheels of his chair have a diameter of 70 centimetres (cm). The hand wheels have a diameter of 40 cm.

The perimeter of a circle is called the circumference. To estimate the circumference of a circle, multiply the diameter by 3.



a. Estimate the circumference of the rear wheel and the hand wheel.

b. Approximately how many rotations does the rear wheel need to make to cover 100 m?

Activity Two

The next event Jayna watches is a heat of the womens' single sculls rowing competition. Here are the results:

Athlete	Time (minutes)
Alicia Davis	7:00
Galina Rostov	6:43
Biyu Hwang	7:15
Taylah Browne	6:57
Waad Abasi	8:29

1. a. Which athlete won the heat? How many seconds did she win by?

b. What is the time difference between first place and fifth place?

2. The course is 1 000 m long. Jayna can run 100 m in 16 seconds. She wonders whether she can run as fast as the rowers can row.

a. If Jayna could keep going at this speed, how many seconds would it take her to run 1 000 m?

b. Change this time to minutes and seconds. Compare this time with that of the fastest rower.

c. Discuss with a classmate whether this is a fair comparison.