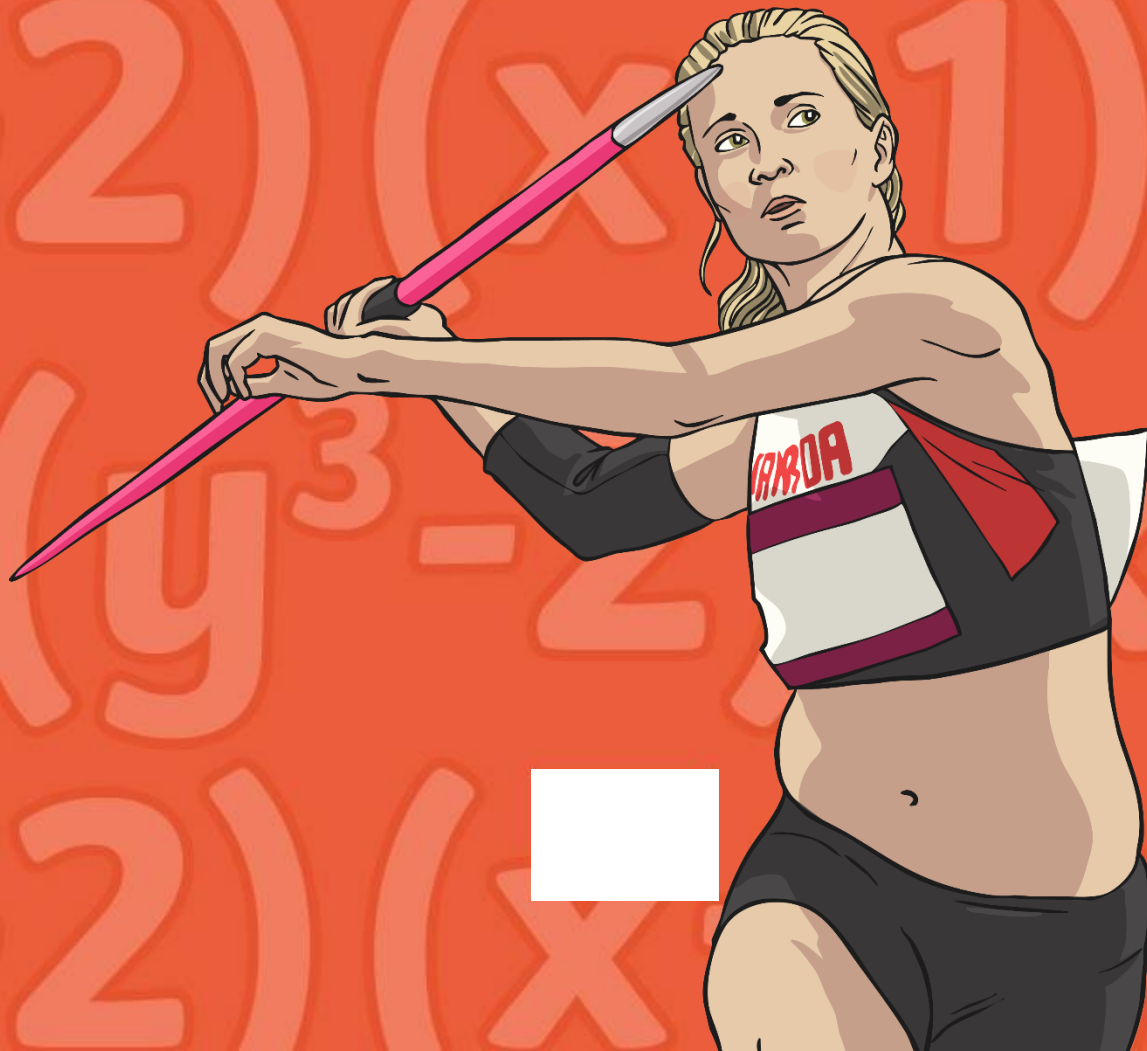


Mathematics

Number and Algebra

Rounding Records



Aim

- I can round decimal numbers to a required degree of accuracy.

Success Criteria

- I can identify which digit to consider when rounding to different degrees of accuracy in a decimal number.
- I can identify which digits to round up and which digits to round down in a decimal number.

Fraction Action



Each person in your group has a fraction card.

Unfortunately, the fractions are mixed up!

You need to rearrange your group so that the fractions are in order.

Take care: some of the fractions have different denominators. You will need to convert them to equivalent fractions so that they all have the same denominator.

$$\frac{1}{8}$$

$$\frac{5}{8}$$

$$\frac{3}{8}$$

$$\frac{5}{7}$$

$$\frac{3}{7}$$

$$\frac{2}{8}$$

Rounding Decimals



We can round whole numbers to different degrees of accuracy in order to describe and understand the numbers more easily.

Using the same methods, we can also round decimal numbers to make them easier to understand and work with.

Let's have a look at some examples.

Rounding Decimals



We can round decimal numbers to different degrees of accuracy. We can round them to the nearest one, or whole number, the nearest tenth, the nearest hundredth and so on.

We do this in the same way that we round whole numbers.

Let's round 35.64 to the nearest tenth.

First, we identify the tenths numbers either side of the number to be rounded.



Rounding Decimals

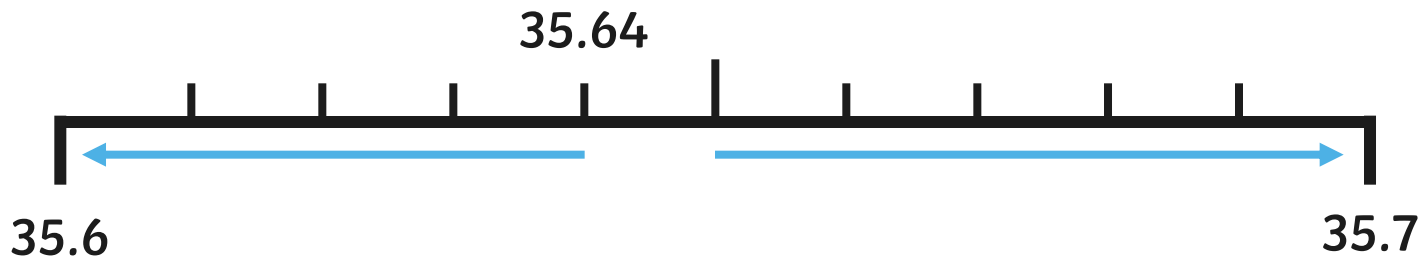


We then identify the digit that we need to consider when deciding whether to round up or round down.

We always consider the digit in the place before the value we are rounding to.

In the example of 35.64, we are rounding to the nearest tenth so we need to consider the digit 4 in the hundredths place.

We know that the digit 4 tells us to round down, so our answer is 35.6.



Rounding Decimals



Choose two of these rounding challenges and find their answers.

You can use the diagram below to help you.

3.4 to the nearest whole number

6.759 to the nearest tenth

5.68 to the nearest tenth

16.7 to the nearest whole number

75.489 to the nearest hundredth

765.395 to the nearest hundredth



Rounding Decimals

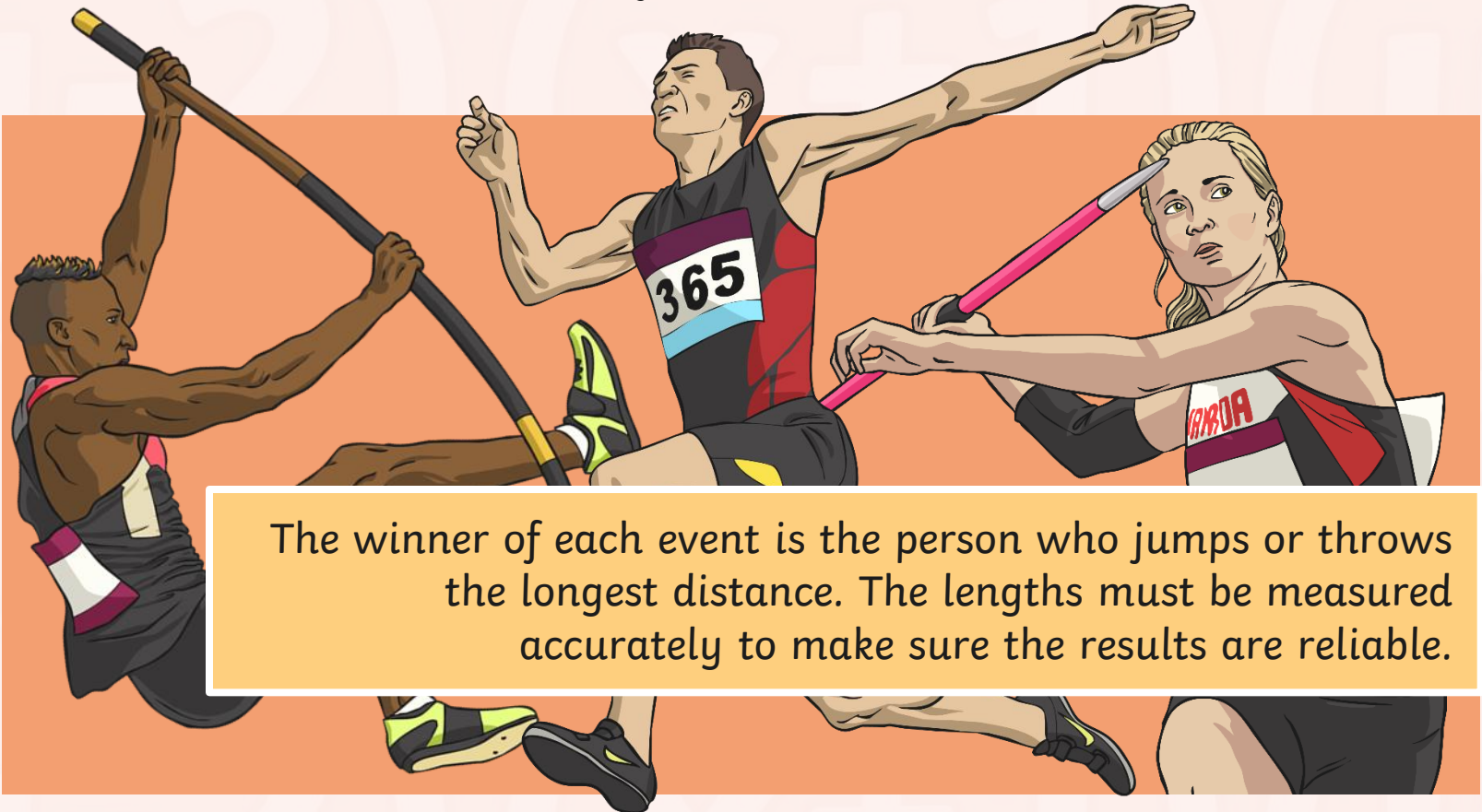


Did you find the answers?

3.4 to the nearest whole number	3
5.68 to the nearest tenth	5.7
75.489 to the nearest hundredth	75.49
6.759 to the nearest tenth	6.8
16.7 to the nearest whole number	17
765.395 to the nearest hundredth	765.40

Athletic Events

Athletes compete in different events, such as the long jump, high jump, pole vault, javelin and shot put.



The winner of each event is the person who jumps or throws the longest distance. The lengths must be measured accurately to make sure the results are reliable.

World Records



These are the world records for some athletic events.

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Who holds a world record that is 6m to the nearest whole number?

Which event do they hold this world record for?

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Renaud Lavillenie for pole vault. 6.16m rounds down to 6m to the nearest whole number.

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Can you round Yelena Isinbayeva's world record to the nearest tenth?

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Yelena Isinbayeva vaulted 5.06m.
This rounds up to 5.1m to the nearest tenth.

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



In which event do the men's and women's world records round to the same whole number?

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Shot put - both the men's and women's records round to 23m to the nearest whole number.

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Both Randy Barnes' and Natalya Lisovskaya's world records in shot put round to 23m to the nearest whole number. Whose record is closest to 23m?

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

World Records



Randy Barnes world record of 23.12m is closest to 23m. 23.12m is 0.12m away from 23m, while 22.63m is 0.37m away from 23m.

Event	World Record (Men)	World Record (Women)
Long Jump	Mike Powell 8.95m	Galina Chistyakova 7.52m
High Jump	Javier Sotomayor 2.45m	Stefka Kostadinova 2.09m
Pole Vault	Renaud Lavillenie 6.16m	Yelena Isinbayeva 5.06m
Javelin	Uwe Hohn 104.80m	Barbora Spotakova 72.28m
Shot Put	Randy Barnes 23.12m	Natalya Lisovskaya 22.63m

Rounding Records Activity



A sports club held an athletics competition. There were several events with different age categories for each event.

You can see the winning lengths for the different categories in each event on your Mathletics Activity Sheet.

Can you round the lengths to the different degrees of accuracy?

Rounding Records

I can round decimal numbers to a required degree of accuracy.

A sports club held an athletics competition. There were several events with different age categories for each event.
Can you round the lengths to the different degrees of accuracy?

Event and Category	Length
Long jump: Under 11	4.2595m
Long jump: Under 16	3.9709m
High jump: Under 11	0.9376m
High jump: Under 16	0.8696m
Pole Vault: Under 11	2.1147m
Pole Vault: Under 16	3.7318m
Javelin: Under 11	50.0741m
Javelin: Under 16	39.2308m
Shot put: Under 11	8.2699m
Shot put: Under 16	12.3515m

Rounding Records

I can round decimal numbers to a required degree of accuracy.

A sports club held an athletics competition. There were several events with different age categories for each event.
Can you round the lengths to the different degrees of accuracy?

Event and Category	Length
Long jump: Under 11	4.256m
Long jump: Under 16	3.972m
High jump: Under 11	0.937m
High jump: Under 16	0.869m
Pole Vault: Under 11	2.114m
Pole Vault: Under 16	3.731m
Javelin: Under 11	50.074m
Javelin: Under 16	39.238m
Shot put: Under 11	8.269m
Shot put: Under 16	12.351m

Rounding Records

I can round decimal numbers to a required degree of accuracy.

A sports club held an athletics competition. There were several events with different age categories for each event.
Can you round the lengths to the different degrees of accuracy?

Event and Category	Length	Round to the nearest whole number	Round to the nearest tenth
Long jump: Under 11	4.25m		
Long jump: Under 16	3.97m		
High jump: Under 11	0.93m		
High jump: Under 16	0.86m		
Pole Vault: Under 11	2.11m		
Pole Vault: Under 16	3.73m		
Javelin: Under 11	50.07m		
Javelin: Under 16	39.23m		
Shot put: Under 11	8.26m		
Shot put: Under 16	12.35m		

Athletics Competitor



Imagine you are a competitor at the athletics event.

Which event will you take part in?
Tell your partner.

Roll a dice four times to see how far you jump or throw in your chosen event. You can arrange the four digits however you wish, but you must have at least 2 decimal places.

Show your partner how far you jumped or threw. **Who managed the longest length?**



Athletics Competitor



Round your length to the following degrees of accuracy:

- nearest whole number;
- nearest tenth;
- nearest hundredth.

Ask your partner to check your rounding.



Aim



- I can round decimal numbers to a required degree of accuracy.

Success Criteria

- I can identify which digit to consider when rounding to different degrees of accuracy in a decimal number.
- I can identify which digits to round up and which digits to round down in a decimal number.

