Number and Algebra: Number and Place Value: Rounding Measures

Australian Curriculum
This lesson plan could be used to support the teaching and learning of the following Content Descriptions from the Australian Curriculum.

Y5 – Number and Algebra, Number and Place Value
Use estimation and rounding to check the reasonableness of answers to calculations (ACMNA099)

Child-Friendly Aim:
I can round decimal numbers to different values.

Success Criteria:
I can identify the values above and below a number.

I can identify which digit to focus on when rounding to different values.

I can identify which digits to round up and which digits to round down.

Key/New Words:
Round, digit, place value, decimals, whole numbers, ones, tenths, hundredths.

Resources:

Lesson Pack

Pegs – 30 per group

Masking tape

Metre stick – 1 per group

Beanbag – 1 per group

Counters – 2 per group

Ruler – 1 per group

Access to space to carry out the standing long jump and the beanbag shot put

Preparation:

Peg Rounding Cards – 1 per group, cut out in advance

Activity Guides – 1 per group

Differentiated **Score Card Activity Sheet** – 1 per child

Rounding Number Line – as required

Line drawn for children to stand on for the standing long jump and beanbag shot put

Prior Learning: It will be helpful if children have covered place value of numbers up to 1 000 000, and rounding to different values.

Learning Sequence

Peg Rounding: Give each group a set of **Peg Rounding Cards** and 30 pegs. Children identify the correct answer for each card by clipping a peg onto the right box on the card. Share the answers with the class.

Rounding Decimals: Introduce rounding decimals, referring to the **Lesson Presentation**.

Find the Nearest: Model rounding decimal numbers to the nearest whole number or the nearest tenth using the **Lesson Presentation**. Click through the slides to demonstrate and recap the rounding method. Children choose two of the rounding challenges shown on the Lesson Presentation and solve them. Share the answers an discuss any issues. Can children identify the numbers either side of the number to be rounded? Can children identify whether to round up or round down?

Championship Scores: Share the context of the activity – collecting scores from a series of games, and rounding the scores. Go through the example of tiddlywinks as shown on the **Lesson Presentation**. Children round one of the example scores to the nearest whole number. Share the answers and address any misconceptions. Can children round decimals numbers to the nearest whole number?

Rounding Championships: Children work in groups and use the **Activity Guides** to participate in three events: standing long jump, tiddlywinks and beanbag shot put. Children record their group's scores on the differentiated **Score Card Activity Sheet**, then round the scores to the nearest whole number or tenth. Can children round decimal numbers to the different values?

★ Round the scores to the nearest whole number. Use the **Rounding Number Line** if required.

★★ Round the scores to the nearest whole number and the nearest tenth.

★★★ Round the scores to the nearest whole number and the nearest tenth, and consider the reasoning question about the difference between the raw scores and the rounded scores.

Rounding Reasoning: Children discuss the reasoning question shown on the **Lesson Presentation** about the difference between the raw scores and the rounded scores. Higher ability children can share their thoughts from the group activity.

Masterit
Roundit: Use this **Rounding Decimals Maths Mastery Powerpoint** to solve problems involving rounding decimals.

Mathematics

Number and Algebra
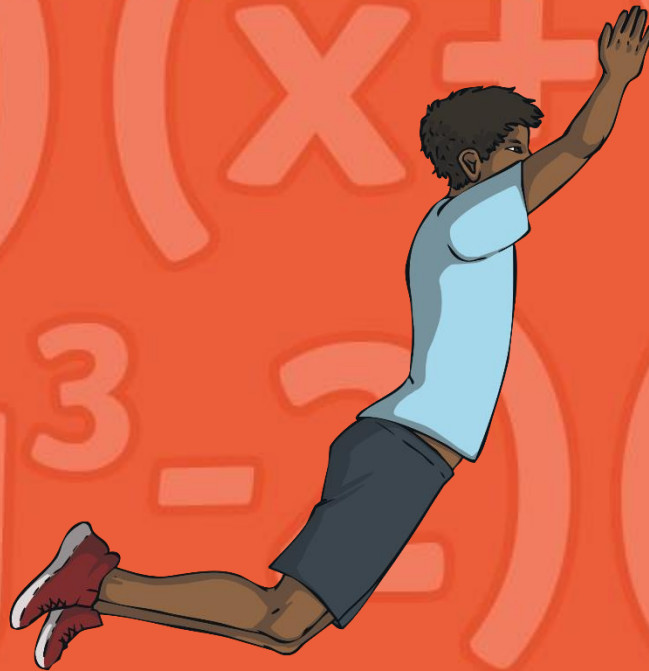
Rounding Measures

Aim

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Peg Rounding

Your group has a set of **Peg Rounding Cards**.
On each card you will find a rounding question and 3 possible answers.

You need to work as a group to identify the correct answer for each card. There are enough cards for each person in your group to have several cards.

Clip a peg onto the correct answer on each card.

Will your group get all the pegs in the right place?

563 rounded to the nearest 10	67 845 rounded to the nearest 1000
560 | 570 | 600	67 800 | 67 000 | 68 000

3462 rounded to the nearest 100	478 652 rounded to the nearest 100 000
3400 | 3500 | 4000	480 000 | 400 000 | 500 000

Peg Rounding

235 rounded to the nearest 100

| **200** | 300 | 240 |

Rounding Decimals

We have learnt how to round whole numbers to different values in order to simplify and work with the numbers more easily.

Using the same methods, we can also round decimal numbers to different values.

Let's have a look at some examples.

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Find the Nearest

Round 23.4 to the nearest one, or the nearest whole number.

23.4

23   24

23.4 rounded to the nearest one is 23.

Find the Nearest

Rounding to the nearest tenth is just the same!

3.27

3.2   **3.3**
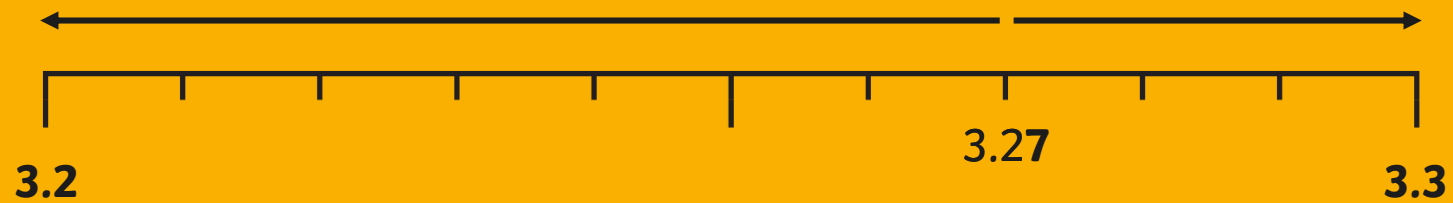
It is nearer to 3.3 on the number line, and the hundredths digit is 7.
5, 6, 7, 8 and 9 tell us to round up.

Find the Nearest

Choose 2 of these rounding challenges.
You can use the number line below to help you.

5.4 to the nearest whole number.

2.19 to the nearest tenth.

8.82 to the nearest tenth.

19.7 to the nearest whole number.

75.45 to the nearest tenth.

456.72 to the nearest whole number.
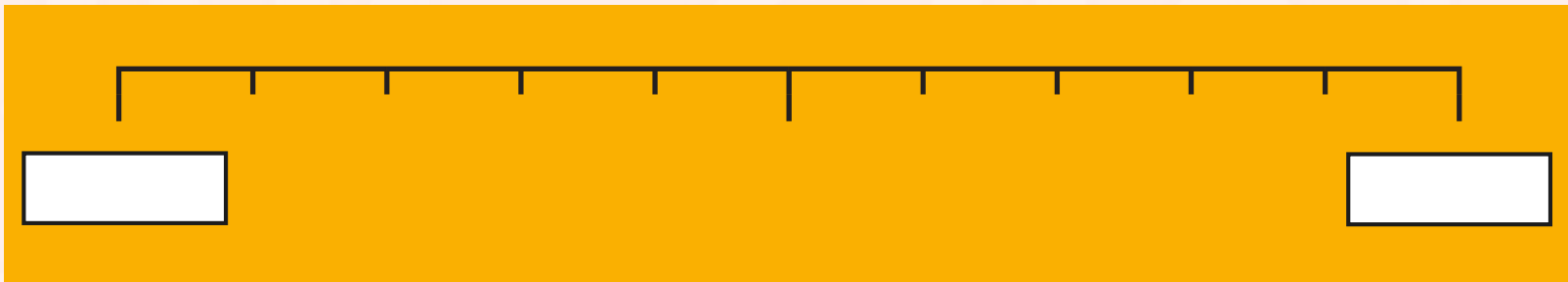
Find the Nearest

How did you do?

5.4 to the nearest whole number.	**5**
2.19 to the nearest tenth.	**2.2**
8.82 to the nearest tenth.	**8.8**
19.7 to the nearest whole number.	**20**
75.45 to the nearest tenth.	**75.5**
456.72 to the nearest whole number.	**457**
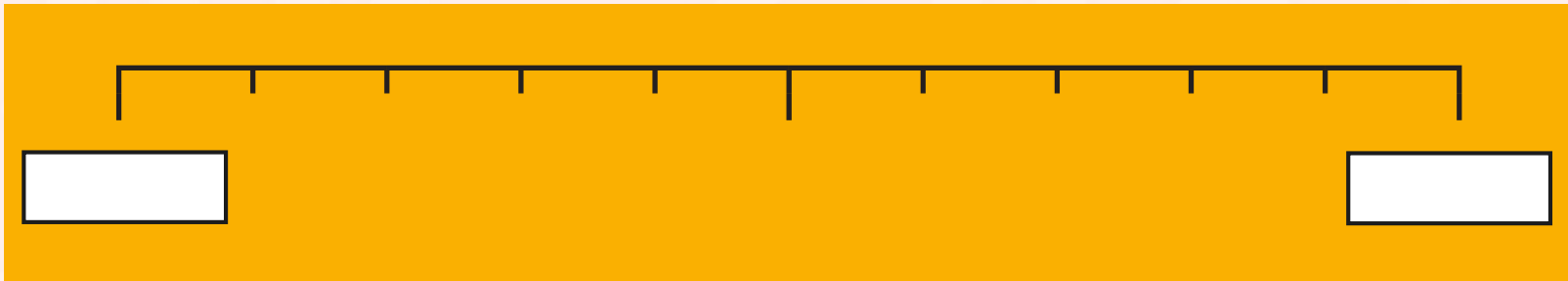
Championship Scores

These children have been participating in their class's mini championship games.
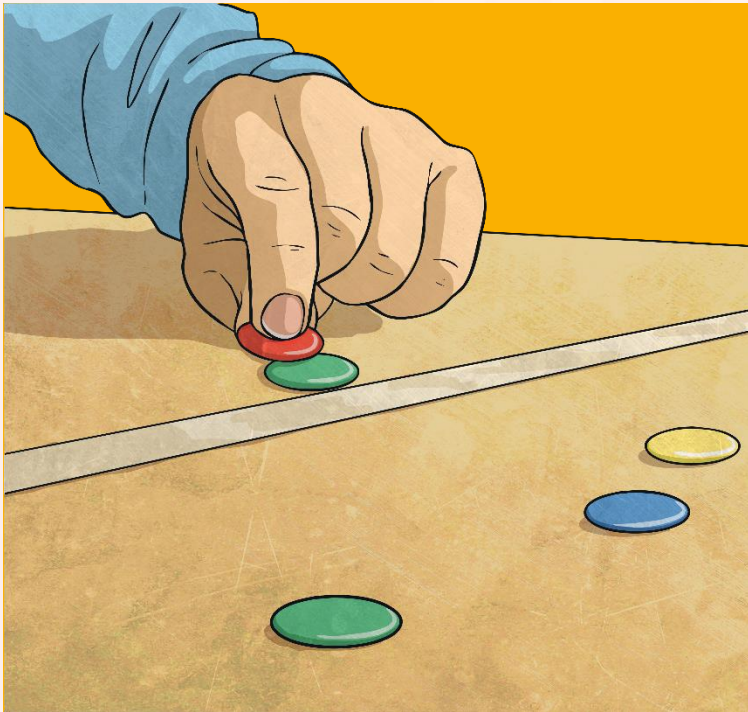
One of the games is a tiddlywinks round.

Children have to flip a tiddlywink counter and measure how far it travels.

Each group records their scores.

Championship Scores

Here are the scores for one of the groups:

Child	Distance
Linden	5.7cm
Saif	13.4cm
Ava	7.3cm
Tonisha	12.6cm
Harry	6.1cm
Poppy	11.9cm

Choose one child's score and round it to the nearest whole number.

Championship Scores

Did you round it correctly?

Child	Distance	Rounded to the nearest whole number
Linden	5.7cm	6cm
Saif	13.4cm	13cm
Ava	7.3cm	7cm
Tonisha	12.6cm	13cm
Harry	6.1cm	6cm
Poppy	11.9cm	12cm

Rounding Championships

You are going to compete in your own rounding class championships!

Each group will compete in 3 events: beanbag shot put, tiddlywinks and standing long jump.

You will follow the instructions on the **Activity Guide** for each event and record the score of each person in your group on the **Scoring Card Activity Sheet**.

Once your group has competed in an event, you should round the scores to the values given on the **Scoring Card Activity Sheet**.

Rounding Reasoning

Some people in our class have been thinking about whether the highest raw scores in each event are always the highest rounded scores.

Can anyone share their thoughts on this?

Rounding Reasoning

The highest raw scores will not always be the highest rounded scores.

Let's look at the example we used earlier in the lesson:

Child	Distance	Rounded to the nearest whole number
Linden	5.7cm	6cm
Saif	13.4cm	13cm
Ava	7.3cm	7cm
Tonisha	12.6cm	13cm
Harry	6.1cm	6cm
Poppy	11.9cm	12cm

Because Saif scored 13.4cm, we round this down to 13cm.

Tonisha only scored 12.6cm, but because the tenths number is a 6, we still round up to 13cm.

Their rounded scores are the same.

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Number and Algebra | Rounding Measures

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