# Year 4: Science and HASS

## Lesson Plan: How much does it rain in Tasmania?

## Introductory activities (engage)

**(10 minutes each)**

As a class group brainstorm:

1. Where does it rain?
2. Does it rain more in some areas than others?
   a. If so, why?

| Answers |
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| **Wind/proximity to large bodies of water** |
| • Wind carries moisture through the air. If the wind travels over a large body of water it often contains high levels of water vapour. Winds that blow inland tend to be a lot drier. |
| **Landscape/mountains** |
| • It rains more over mountains because the air temperature at the top of the mountain is cooler than at sea level. |
| **Air temperature** |
| • More water evaporates on a warm day. Warmer air holds more water vapour which leads to increased precipitation. |

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## Lesson (explore)

**(20 minutes)**

| Materials |
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| Smart Board |
| Activity 1: Colour-by-code rainfall |
| Coloured pencils |
| Topographical map of Tasmania (suggested links provided) |
| Activity2: Recorded rainfall |
| Activity 3: Let's build a rain gauge |
| Activity 4: Rainfall results |

Hydro Tasmania's hydropower stations have been built in high-rainfall water catchment areas.

There are rain gauges in each of these catchment areas. These gauges tell Hydro Tasmania how much rain has fallen and where. The information is recorded in different charts, tables and on maps.

Hydro Tasmania employs a team of scientists, engineers and data analysts to review the data collected. The data is used to inform business decisions.

Rain is important because it results in:

- rivers and creeks collecting rain (water).
- lakes storing water .
- water being available to generate electricity in their power stations.

The rainfall data is shared on the Hydro Tasmania website for other water users to access. It helps these water users (anglers, boaters, farmers, irrigators and recreation users) make decisions such as where to go fishing or where water will be available from the rivers for their crops and animals.

1. Introductory Activity 1 - Colour-by-code rainfall.

   Average Annual Rainfall Map *(hint: colour from highest number to lowest).*

   – Have students explore where it rains the most (on average) in Tasmania.
   – Ask students where a good place to build a power station might be *(hint: they need lots of rain).*
   – Invite students to explore how much rain they get in their area? *(hint: display a digital map of Tasmania on the smart board, students find their suburb location and transfer it to the colour-by-code rainfall activity).*

2. Explore a topographical map of Tasmania *(hint: LISTmap, Google Maps or other).*

   – Ask students what they notice about these areas *(hint: mountainous, lots of rivers and lakes).*
   – Have students locate mountains, lakes and rivers.
   – Ask students if they have visited any of these areas.

3. Explore the Hydro Tasmania water map on the Hydro Tasmania website https://www.hydro.com.au/watermap/

## Options for assessment and extension

| | Activity |
|---|---|
| **MATHEMATICS**<br>**Data Representation**<br><br>**HASS**<br>**Analysing**<br><br>**SCIENCE**<br>**Science Inquiry**<br><br>**Individual activity** | Have students complete Activity 2 - Recorded rainfall.<br><br>In this activity pack students will explore the rainfall recorded at Lake Mackenzie and Lake Mackenzie during February 2018.<br><br>Pages 1 to 7 have variations of tables and bar or column charts for students to interpret, answer questions and convert the data into picture graphs and bar or column charts.<br><br>**Extension**<br><br>Lake Margaret has been heritage listed since 2007 and is a significant site in Tasmania's electricity history. Page 8 of Activity 2 Recorded rainfall provides a template to research five facts about Lake Margaret. |
| **MATHEMATICS**<br>**Data Representation**<br><br>**HASS**<br>**Analysing**<br><br>**SCIENCE**<br>**Science Inquiry**<br><br>**Individual or small group activity** | This activity is recommended for a forecast period of rain.<br><br>Students build their own rain gauge and use it to collect record and monitor rainfall over a school week.<br><br>For instructions and materials see Activity 3: Let's build a rain gauge.<br><br>Students record their findings in Activity 4: Rainfall results. Pages 1 to 5 have variations of tables and charts to complete.<br><br>**Extension**<br><br>Add a thermometer to the rain gauge and record daily temperature as well. Replace page 2 of Activity 4 with the adjusted table on page 6.<br><br>Create a digital table and graph of the data collected using Microsoft Excel (or similar). |

## Elaborate and review

As a class group review:

**What are the main differences between tables, picture tables and bar or column charts?**

- Tables display information or data in rows and columns.
- Bar or column charts are graphical representations of information.
- Text is rarely used in charts but is often used in tables.
- A picture graph uses symbols to represent information.

**Did you notice any patterns between your weather observations and the rainfall results?**

- Discuss your results.