UNIT PLAN

Title: Full Moon Party
Outcome level(s): 3, 4 It is anticipated that students will mostly demonstrate level 3 outcomes.
Student age: 9, 10 (QLD Year 5)
Created by: Shelley Gage
School: Jones Hill State School, Gympie, Queensland

UNIT RATIONALE

This topic runs for fifteen weeks, either from January to April or from August to December. It encompasses all Key Learning Area’s and is presented here with a focus on mathematical concepts. Students learn to make observations of and record data about the moon, and to use this data to make predictions and to lead them to a greater curiosity and knowledge of the solar system. They share this learning with other students around the world. It will culminate in the student’s using Maths to organize all aspects of a full moon party/sleepover.
## Attributes of a Lifelong Learner

<table>
<thead>
<tr>
<th>Knowledgeable person with deep understanding</th>
<th>Who makes predications about the Moon’s appearance over time.</th>
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</thead>
<tbody>
<tr>
<td>Complex thinker</td>
<td>Who makes a model of the Moon, Earth and Sun, a moonscape and party accessories.</td>
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<tr>
<td>Creative person</td>
<td>Who investigates the formation of craters on the moon and the length of moonlight over a given time.</td>
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<tr>
<td>Active investigator</td>
<td>Who presents new understandings to parents.</td>
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<tr>
<td>Effective communicator</td>
<td>Who submits a folder of work showing on-going observations and ideas leading up to predictions.</td>
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<tr>
<td>Participant in an interdependent world</td>
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<tr>
<td>Reflective and self-directed learner</td>
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<tr>
<td>Key Learning Area</td>
<td>Strand</td>
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| Science                 | Earth and Beyond     | 3.1 Students identify and describe some interactions (including weathering and erosion) that occur within systems on Earth and beyond.  
3.2 Students discuss regular and irregular events in time and space that occur on the Earth and in the sky.  
4.2 Students collect information which illustrates that changes on Earth and in the solar system occur on different scales of time and space. |
| Science and Society     |                      | 3.1 Students relate some of the ways that people of various historical and cultural backgrounds construct and communicate their understandings of the same natural phenomena.  
3.2 Students recognise the need for quantitative data when describing natural phenomena. |
| Life and Living         |                      | 3.3 Students describe some interactions (including feeding relationships) between living things and between living and non-living parts of the environment. |
| Maths                   | Number               | N3.1: Students compare, order and represent whole numbers to 9999 and common, and decimal fractions, calculate cash transactions and describe other methods of payment. |
|                         | Measurement          | M3.2: Students read, record and calculate with twelve hour time and interpret calendars and simple timetables related to daily activities. |
|                         | Space                | S3.2: Students interpret and create maps and plans using a range of conventions, describe locations and give directions using major compass points, angles and grids. |
|                         | Patterns and Algebra | PA 3.1 Students create and continue number patterns, identify, describe and represent relationships between two quantities and use backtracking to reverse any one of the four operations. |
|                         | Chance and Data      | CD 3.2 Students design and trial a variety of data collection methods and use existing sources of data to investigate their own and others' questions, organise data and create suitable displays identifying and interpreting elements of the displays. |
Aspects of ‘working scientifically’ and their components are:

<table>
<thead>
<tr>
<th>INVESTIGATING</th>
<th>UNDERSTANDING</th>
<th>COMMUNICATING</th>
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<tbody>
<tr>
<td>• Collecting information</td>
<td>• selecting and justifying</td>
<td>• Describing</td>
</tr>
<tr>
<td>• Organizing</td>
<td>• Applying ideas and concepts</td>
<td>• Present results in written form</td>
</tr>
<tr>
<td>• Predicting</td>
<td>• Understand and manipulate observations</td>
<td>• Share findings</td>
</tr>
<tr>
<td>• Measuring and recording of angles and compass directions</td>
<td>• Displaying tabled results</td>
<td></td>
</tr>
<tr>
<td>• Identifying</td>
<td>• Interpret results</td>
<td></td>
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<tr>
<td>• Observe and record data</td>
<td>• Make predictions based on observations</td>
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<tr>
<td>• Handling materials</td>
<td>• Formulating and elaborating ideas</td>
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**Unit overview (full moon party)**

<table>
<thead>
<tr>
<th>STAGE</th>
<th>ACTIVITY</th>
<th>RESOURCES</th>
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| **INTRODUCTION** | Whole class and groups. Discussion and brainstorming, what do we know about the moon?  
Pose question. Who would like to have a full moon party?  
Whole class. Give out booklets and outline moon project. | Charts  
Booklets                                                                 |
| **INVESTIGATION** | Whole class. Make an Astrolabe.  
Whole class on the oval. Use an Astrolabe.  
Whole class. Daily check results and discuss other ways of finding info- is it relevant to your home?  
Whole class. Find information to make a scale model of the Sun, Earth and Moon.  
Groups of 6. Make scale models of the Sun, Earth and Moon.  
Trace a map of the lit side of the moon, naming features.  
Draw a timeline from 500BC to 1970AD. Let 1cm represent 10 years. How long will it be? Groups to work on one section at a time. Use as a wall display.  
Investigate the formation of craters on the moon.  
Discuss moonlight (earthshine) length. Collect and record once a week the length of moonlight in a day. Compare with the daylight charts already made. | Template, card, washer, fishing line  
Astrolabe  
Homework and recorded data, newspapers and calendars  
Internet and Encyclopedias, and non-fiction books.  
DVD All About the Moon  
Paper mache and paint.  
QSA Science Sourcebook module Earth and Beyond, Level 3 pp31 (online)  
Times can be found in the weather section of the newspaper. |
| **CONSOLIDATION** | Do vocabulary work  
Discuss data recording and draw conclusions from the results. Make predictions about the moon’s appearance over time. Use a calendar to work out when the next full moon will be.  
Use mapping and crater activities to design and make a moonscape using chicken | Vocabulary sheet (see attachment)  
Moon project booklets  
World Book entry ‘moon’ |
<table>
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<tr>
<th>DATABASE</th>
<th>wire, papermache and paint.</th>
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</table>
| APPLICATION    | Prepare for the full moon party:  
Research a traditional story with the moon as a focus, prepare to tell it at the party.  
Brainstorm party planning (when, where, food, drink, activities, clothing and invites).  
Create invitations using word processing.  
Design a picture to print on a tee shirt for the party.  
List and cost food and decoration items.  
Students reflect on how their ideas about the moon have changed throughout the unit. |
|               | Books of legends and myths.  
Microsoft Paint.  
Canon tee shirt transfers (make sure picture is reversed before printing). |

### Unit overview (Planting by the moon)

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<td><strong>INTRODUCTION</strong></td>
<td>Explain that the students are Mythbusters who are to decide if planting by the moon phases makes a difference to plant growth. Find sowing charts. Complete blank calendars for the year. Colour the seasons and put stickers on the special events for the year. Discuss the Zodiac and some people's beliefs (Zodiac is based on the solar year).</td>
<td>magazines</td>
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</table>
| **INVESTIGATION** | Draw a table up for planting flower, leaf, root and fruit crops and add one date for poor growth (node). Students recognize and work out dates for holidays and weekends. Work out harvest dates 6 to 8 weeks after planting. Discuss quantitative data and qualitative data. 
- identify problems with comparing over two week intervals;
- Measuring 3 samples means that each plot has to be harvested 3 times;
- Decide how many plants in each plot;
- Draw up a plan for planting using planting distances on the seed packets
Use Inspirations template for students to plan a Powerpoint about the progress of their investigation.
Discuss organization of four groups – one for each crop.
After the fist planting discuss the variables and whether growth will be different from planting dates. Students word process paragraph of ideas.
Each group harvests one third of the crop on each harvest date and completes chart of measurements. | Seed packets
Science journals
Inspirations
Powerpoint
Digital camera
Seeds: bok choy(leaves); Daikon white radish (roots);
Bush beans (seeds); Marigolds (flowers)
tools
labels (cut up plastic container lids written on with soft lead pencil)
measuring tape
charts |
| **CO** | Students choose one measurement and use the data to make a column graph using Microsoft Excel | |
| **N SOL IDATION** | Excel.
Revisit ideas about quantitative data and qualitative data, in light of the practical work they have completed.
  - Identify problems with comparing over two week intervals;
  - Measuring 3 samples means that each plot has to be harvested 3 times;
  - Decide how many plants in each plot;
  - Draw up a plan for planting using planting distances on the seed packets
Groups present their findings to the class. Relate their findings back to their results.
Summarise the class’s work into a hypothesis. |
| **A P P L I C A T I O N** | Students share their results with parents at the end of the full moon party.
Students reflect on how their ideas may have changed through the course of the unit
(how could you reduce the effect of variables? Are there any other investigations relating the effect of the moon that you would like to explore?) | Powerpoints
Science journals |
**Curriculum Literacies:**
- Read and draw tables.
- Represent data.
- Information report.
- Research - Encyclopaedia, Internet.
- Essays.
- Individual and group discussion.
- Retrieval charts.
- Storytelling.
- Invitations.

**ICT’s:**
- Internet research.
- Sharing via E-mail.
- Word processing.
- Essays and Invitations.
- Power-point.
- Excel
- Powerpoint
- Word processing
- Digital camera
- Inspirations

**Mental Computation Strategies:**
- Scale.
- Size of Earth, Moon and Sun.
- Costing for Full Moon party.
- Program timing.

**Games:**
- 

**Manipulatives:**
- Constructing globes, Astrolabe.
- Planting, harvesting, measuring, counting.

**Reflection:**
- Discussions of results/predictions.
- Changes, predictions, modifications, future investigations.
- Complete sheet after party- What I have learnt, What I enjoyed, What I would like to find out now.
Student work samples:

<table>
<thead>
<tr>
<th>Mythbusters</th>
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<tbody>
<tr>
<td>True, because plants grow at night by the moon light. I have watched TV shows and read books. I’ve asked on the internet. I’m doing an experiment now, I like it.</td>
</tr>
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<tr>
<td>I don’t think it’s going to work because how could it grow on a certain phase of the moon? My Pop plants on any days and his cabbages, carrots and mandarins are yum!</td>
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