ANIMAL SURVIVAL ON PLANETS - GR. 2

MINA J (/USERS/AZMINA-JUMA), TINA SIDDIK (/USERS/TINA-SIDDIK)

Title: Animal Survival on Planets

Grade Level: 2

Timeline:

4-6 weeks

(Depending on the interest and background of students)

Please note:

Students created their inquiry project along with their learning buddies (Gr. 8)

Strand(s)

Science:

Understanding Life Systems:

Growth and Changes in Animals

Social Studies:

People and Environments:

Global Communities

Unit Overview:

Learning Goal:

We are learning about how animals can survive and adapt to different planets.

Inquiry Focus:

- How can animals live on planets that are different from Earth?
- What does my planet need to have so that my animal can survive?
- What kind of environment will my planet have? (i.e. climate, vegetation)
- How can my animal survive? What are its' needs for survival?
- How can understanding the characteristics and needs of animals help people to create a habitat that meets these needs?

Science Big Ideas:	Overall Expectations:
Understanding Life Systems: Growth and Changes in Animals	Investigate similarities and differences in the characteristics of various animals; Demonstrate an understanding that animals grow and change and have distinct characteristics.

Social Studies Big Ideas:	Overall Expectations:
People and Environments: Global Communities	**B2. Inquiry:** use the social studies inquiry process to investigate aspects of the interrelationship between the natural environment, including the climate, of selected communities and the ways in which people in those communities live (FOCUS ON: *Interrelationships; Patterns and Trends*) **B3. Understanding Context:** identify and locate various physical features and selected communities around the world, and describe some aspects of people's ways of life in those communities (FOCUS ON: *Significance*)

Cross curricular subjects:

Language Big Ideas:

Reading for Meaning

Reading with Fluency

Reflecting on Reading Skills and Strategies

Developing and Organizing Content

Using Knowledge of Form and Style in Writing

Applying Knowledge of Language Conventions and Presenting Written Work Effectively

Reflecting on Writing Skills and Strategies

Listening to Understand

Speaking to Communicate

Reflecting on Oral Communication Skills & Strategies

Overall Expectations:

Reading OE 1, 2, 3:

Specifics: 1.2, 2.3, 2.4, 4.2

Writing OE: 1, 2, 3, 4

Specifics: 2.4, 2.6, 2.7, 2.8, 3.4, 3.5, 3.6, 3.7, 3.8, 4.3

Oral OE 1, 2, 3

Specifics:1.1, 1.2, 1.3, 1.4, 1.6, 1.9, 2.2, 2.3, 2.4, 2.5. 2.6, 2.7, 3.1, 3.2

Math Big Ideas:

Geometry and Spatial Sense:

Geometric Properties

Geometric Relationships

Measurement:

Attributes, Units, and Measurement Sense

Measurement Relationships

Overall Expectations:

Geometry and Spatial Sense OE:

Identify two-dimensional shapes and three-dimensional figures and sort and classify them by their geometric properties;

Compose and decompose two-dimensional shapes and three-dimensional figures;

Specifics:

Distinguish between the attributes of an

object that are geometric properties (e.g., number of sides, number of faces) and the attributes that are not geometric properties(e.g., colour, size, texture), using a variety of tools (e.g., attribute blocks, geometric solids, connecting cubes);

Identify and describe various three dimensional figures (i.e., cubes, prisms,

pyramids) and sort and classify them by

their geometric properties (i.e., number

and shape of faces), using concrete materials (e.g.,“I separated the figures that have square faces from the ones that don’t.”);

Create models and skeletons of prisms andpyramids, using concrete materials (e.g.,cardboard; straws and modelling clay), and describe their geometric properties (i.e., number and shape of faces, number of edges);

Compose and describe pictures, designs, and patterns by combining two-dimensional shapes (e.g.,“I made a picture of a flower from one hexagon and six equilateral triangles.”);

Build a structure using three-dimensional

figures, and describe the two-dimensional shapes and three-dimensional figures in the structure (e.g.,“I used a box that looks like a triangular prism to build the roof of

my house.”).

Measurement OE:

Estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using non-standard units and standard units;

Specifics:

Choose benchmarks – in this case, personal referents – for a centimetre and a metre to help them perform measurement tasks;

Estimate and measure length, height, anddistance, using standard units (i.e., centimetre,metre) and non-standard units;

Record and represent measurements of

length, height, and distance in a variety of ways select and justify the choice of a standardunit (i.e., centimetre or metre) or a nonstandard unit to measure length

Estimate, measure, and record the distance around objects, using non-standard units

Describe how changes in temperature affect everyday experiences (e.g., the choice of clothing to wear);

Use a standard thermometer to determine whether temperature is rising or falling (e.g., the temperature of water, air).

Visual Art Big Ideas:

D1. Creating and Presenting

D2. Reflecting, Responding, and Analysing

Overall Expectations:

D1. Creating and Presenting: apply the creative process (see pages 19–22) to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;

D2. Reflecting, Responding, and Analysing: apply the critical analysis process (see pages 23–28) to communicate feelings, ideas, and understandings in response to a variety of art works and art experiences;

Elements of Design:

Students will develop understanding of all elements of design.

• **Line:**

Horizontal, vertical, diagonal lines; lines that show motion (e.g., pointy, curvy); lines inside shapes

• **Shape and form:**

Symmetrical shapes and forms (e.g., shapes and forms in buildings)

• **Space:**

Overlapping of objects to show depth

• **Colour:**

Secondary colours (various colours made by mixing equal amounts of primary colours, such as violet, orange, green); mixing of colours with a limited palette

• **Texture:**

Textures of familiar objects (e.g., rough tree bark, smooth plastic plate, ridged corduroy fabric); illusion of texture (e.g., a rough texture created by patterns of lines); impasto (thick, textured paint)

• **Value:**

Mixing of a tint; identification of light and dark

Principles of Design:

Students will develop understanding of all principles of design (that is, contrast, repetition and rhythm, variety, emphasis, proportion, balance, unity and harmony, and movement), but the focus in Grade 2 will be on repetition and rhythm.

• **Repetition and rhythm:**

Repetition of colour and shape in patterns; random, alternating, and regular patterns in everyday objects (e.g., textiles, ceramics) and in art (e.g., works by M. C. Escher)

Specifics:

D1.1, D1.4, D2.2, D2.4, D3.1

Key Concepts:

- Classification of animals
- Climate
- Temperature (Degrees Celsius)

Prior Knowledge:

- What is the difference between living and non-living things?
- How do we know if it's living or non-living?
- What are the classifications of animals?
- Do students have prior knowledge of the life cycle of animals? Which ones?
- What are some characteristics of animals that would help them to survive and adapt in their environment?
- What is a habitat?

Materials & Equipment:

Open ended materials were provided

- Chrome books for research
- Cardboard boxes
- Tissue boxes
- Tissue paper
- Paint
- Plasticine
- Styrofoam plates
- Coloured construction paper
- Pencil crayons
- Markers
- Recyclable materials
- Balloons- paper mache
- Scholastic booklets for paper marche
- White glue
- Popsicle sticks

Safety:

- Scissors
- Balloons

Planning: **(Keep in mind of ESL and IEP students)**

Guiding Questions:

- How can animals live on planets that are different from Earth?
- What does my planet need to have so my animal can survive?
- What kind of environment will my planet have? (ie. climate, temperature, and vegetation)
- How can my animal survive? What are its' needs for survival?

What is it that I want my students to learn or to be able to do?

I want my students to learn about the various classifications of animals and learn about the different climates. By having knowledge on the environment, students were able to pick an animal that is able to adapt in their habitat.

How will I know that they learned what I wanted them to learn (or do)?

Through observations, students will learn by their engagement, their research and their final presentation of their information to the class.

How will I get them there?

Through scaffold instructions and various resources with books, online websites and through Google classroom my students were able to gain the knowledge in order to create their 3D habitat and planets.

(Scroll below for more information)

How did I scaffold the instruction of required skill sets and knowledge-building?

(See below)

Observation: (Day 1)

During library book exchange, Ms. Juma observed that students were fascinated with planets and animals and were signing out these books more frequently.

Survey: (Day 2)

We took a survey as a class of what our inquiry topic wanted to be about. The three choices were: creating a playground, animals and planets. The top two choices were animals and planets.

Groupings: (Day 3)

After we took the survey, students wrote down on a post-it-note their top 3 choices of planets they wanted to learn more about. Students were placed in groups according to what planet they chose.

Planet Scavenger Hunt: (Day 4-5) (Depending on availability of Chromebooks)

After students were placed in groups, I created a Google document on Google classroom which contained youtube links on planets. Students viewed these links and completed a scavenger hunt to gain more knowledge about their planet and its' climate.

Animal Scavenger Hunt: (Day 5-6)

After students researched on their planet, they completed another scavenger hunt from Google classroom to learn about the 5 classifications of animals (**Brain pop Jr. video**). After completing their research, students were now ready to choose their animal of choice and thought about what kind of climate and environment their animal will need to live on their planet.

Hot climate - Animals that lived in a Dessert and Rainforest etc.

Cold climate – Animals that lived in the Arctic.

Animal of Interest: (Day 7)

After completing the research, students were able to choose an animal of their

interest from one of the classification of animals. Students had to keep in mind of

the planet's climate and surrounding environment. Students then chose an animal as a group and completed their graphic organizer.

Safety: (Day 8-9)

After completing the graphic organizer, students had multiple training on the tools for safety specifically for the design and build portion of the project.

Inquiry Experiential & Hands-On Opportunities:

3D models of planets & Animal habitats: (Days 10-17)

Students created a 3D model (paper mâché) of their planet and a habitat for their animal using a variety of materials. Once their dioramas and 3D planet models were completed, students painted their creations for their respective planet and habitat for their animal.

Animal Classification Chain (Day 18-19)

Students then completed an Animal Classification chain to display their research.

Delivery:

Inquiry Cycle Display

https://www.teacherspayteachers.com/Product/INQUIRY-CYCLE-DISPLAY-2346113 (file://localhost/about/blank)

Student Materials & Equipment:

(Attachments for the Scavenger Hunt are attached)

- Chromebooks - Google Classroom
- Recyclable materials
- Planet books (according to their interest)
- Animal books (according to their interest & various classifications)

Student Resources:

Growth and change in animals- By: Diane Schlichting

(S&S Learning)

Animals without Backbones

https://www.amazon.com/Animals-Without-Backbones-Grades-1-3/dp/1557996849
(https://www.amazon.com/Animals-Without-Backbones-Grades-1-3/dp/1557996849)

Animals with Backbones

https://www.amazon.com/Animals-Backbones-Grades-Evan-Moor/dp/1557996830?
keywords=animals+with+backbones&qid=1539450794&s=Books&sr=1-1-spell&ref=sr_1_1
(https://www.amazon.com/Animals-Backbones-Grades-Evan-Moor/dp/1557996830?
keywords=animals+with+backbones&qid=1539450794&s=Books&sr=1-1-spell&ref=sr_1_1)

Exploring Space

https://www.amazon.com/Exploring-Space-Grades-Scienceworks-Kids/dp/1557996822?
keywords=exploring+space&qid=1539450862&s=Books&sr=1-2&ref=sr_1_2
(https://www.amazon.com/Exploring-Space-Grades-Scienceworks-Kids/dp/1557996822?
keywords=exploring+space&qid=1539450862&s=Books&sr=1-2&ref=sr_1_2)

Mars Book (All other planet books can also be found on this website below)

(Same series)

https://www.amazon.ca/Mars-Thomas-K-Adamson/dp/1429607378/ref=sr_1_1?
ie=UTF8&qid=1539479174&sr=8 (https://www.amazon.ca/Mars-Thomas-K-
Adamson/dp/1429607378/ref=sr_1_1?ie=UTF8&qid=1539479174&sr=8-
1&keywords=Mars+%28Pebble+Plus%3A+Exploring+the+Galaxy%29+by+Thomas+K.+Adamson)

1&keywords=Mars+%28Pebble+Plus%3A+Exploring+the+Galaxy%29+by+Thomas+K.+Adamson
(https://www.amazon.ca/Mars-Thomas-K-Adamson/dp/1429607378/ref=sr_1_1?
ie=UTF8&qid=1539479174&sr=8-
1&keywords=Mars+%28Pebble+Plus%3A+Exploring+the+Galaxy%29+by+Thomas+K.+Adamson)

Resources & Links:

Inquiry Cycle Display

https://www.teacherspayteachers.com/Product/INQUIRY-CYCLE-DISPLAY-2346113 (https://www.teacherspayteachers.com/Product/INQUIRY-CYCLE-DISPLAY-2346113)

Planets of our Solar System for Kids

https://www.youtube.com/watch?v=d8y8kc317EE (file://localhost/about/blank)

Solar System 101-National Geographic

https://www.youtube.com/watch?v=libKVRa01L8&t=128s (https://www.youtube.com/watch?v=libKVRa01L8&t=128s)

Planets for Kids-Solar Facts about the Solar System-Space Facts for Kids Solar System Information

https://www.youtube.com/watch?v=FTQKy19e2OQ (https://www.youtube.com/watch?v=FTQKy19e2OQ)

Classification of animals – Scavenger hunt

Brain Pop Jr. – Classification of Animals (https://www.youtube.com/watch?v=dCm5CcQhU-c)

Animal Research Report (Teachers Pay Teachers)

https://www.teacherspayteachers.com/Product/Animal-Research-Report-Printables-680058 (https://www.teacherspayteachers.com/Product/Animal-Research-Report-Printables-680058)

Brain Pop Jr.

https://www.youtube.com/watch?v=dCm5CcQhU-c (https://www.youtube.com/watch?v=dCm5CcQhU-c)

Clip art:

Google Images

Assessment: (Checkbric Template)

https://www.ophea.net/teaching-tools

Assessment FOR Learning

- Teacher observations
- Conversations
- Checklists
- Oral responses
- Problem solving
- Portfolios for writing

Assessment AS Learning

- Portfolios
- Teacher observations
- Conversations
- Peer and self checklist
- Student teacher conferences

Assessment OF Learning

- Portfolios
- Oral Presentations
- Journals
- Rubrics modified for ESL & IEP students
- Peer and self assessment
- (star & wish)

Assessments:

- Students were assessed through their conversations (oral assessment)
- Scavenger hunt for research (writing assessment)
- Oral presentations to present their planet (oral assessment)
- Detailed report about their animal (writing assessment)
- Invitation from other classes to present their research

Extensions:

- Guest speaker from Toronto Zoo
- Field Trip to Toronto Zoo (Classification of Animals)
- http://www.torontozoo.com/EducationAndCamps/Elementary/?pg=FullDay (http://www.torontozoo.com/EducationAndCamps/Elementary/?pg=FullDay)
- Guest speaker from the Canadian Space Agency
- Gr. 6 - Classroom Catalyst - By: Tina Siddik (Refer to Resource Section)

(mailto:?subject=Check out this page&body=https://connex.stao.ca/classroom-catalyst/animal-survival-on-planets-gr-2)

RESOURCES

- Inquiry Display (https://www.teacherspayteachers.com/Product/INQUIRY-CYCLE-DISPLAY-2346113)
- Animals Without Backbones (https://www.amazon.com/Animals-Without-Backbones-Grades-1-3/dp/1557996849)
- Animals With Backbones (https://www.amazon.com/Animals-Backbones-Grades-Evan-Moor/dp/1557996830)
- Exploring Space (https://www.amazon.com/Exploring-Space-Grades-Scienceworks-Kids/dp/1557996822)
- Planet Books (https://www.amazon.ca/Mars-Thomas-K-Adamson/dp/1429607378/ref=sr_1_1)
- Planets of our Solar System for Kids (https://www.youtube.com/watch)
- Solar System 101-National Geographic (https://www.youtube.com/watch)
- Planets for Kids-Solar Facts about the Solar System-Space Facts for Kids Solar System Information (https://www.youtube.com/watch)
- Animal Research Report (Teachers Pay Teachers) (https://www.teacherspayteachers.com/Product/Animal-Research-Report-Printables-680058)
- Brain Pop Jr. (https://www.youtube.com/watch)
- Assessment: (Checkbric Template) (https://www.ophea.net/teaching-tools)
- Toronto Zoo (http://www.torontozoo.com/EducationAndCamps/Elementary/)
- Planet Scavenger Hunt (https://connex.stao.ca/sites/default/files/handout_1-_planet-scavenger_hunt_.docx)
- Animal Classification Scavenger Hunt - Google Classroom (https://connex.stao.ca/sites/default/files/handout_2-_classification_of_animals_-_scavenger_hunt_-google_classroom.docx)
- Animal Classification Scavenger Hunt (https://connex.stao.ca/sites/default/files/handout_3-_scavenger_hunt-classifications_of_animals_.docx)
- Animal Research Chain (https://connex.stao.ca/sites/default/files/handout_4-_animal_chain.docx)
- Self-Assessment (https://connex.stao.ca/sites/default/files/handout_5_-_self-assessment-animal_survival_on_planets_.docx)
- Gr. 6 - Classroom Catalyst (Adapted for Junior Division) (https://connex.stao.ca/sites/default/files/gr.6-classroomcatalyst.docx)

RETURN

TO CATALYSTS (/classroom-catalysts)

(/classroom-catalysts)