

# Lesson Study

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What do my students need to know in this unit?



What skills/ strategies will they use/ demonstrate by the end of the unit?



Math 8 Unit Overview: Pattern and Algebra				
<b>Big Ideas</b>	1. There are patterns in numbers that can be described 2. Patterns repeat or grow, but are predictable 3. We can describe patterns in charts, graphs, expressions with variables and constants and in words			
<b>Thinking Strategies</b>	Connection making, visualizing and identifying patterns			
<b>week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Essential Questions</b>	What techniques can we use to recognize and describe patterns?	How can we track changes and growth in a pattern? What does this mean about the pattern?	How can we represent what we see in patterns? How do mathematicians explain change?	How can we make and support logical predictions from the graphs?
<b>Lesson Topic</b>	Number patterns- what goes in, what comes out	Animals that grow- what changes, what stays the same?	Patterns in T charts- Implicit and explicit relationships	What's in a line? Slopes, intercepts and rate of change.
<b>Thinking Strategy</b>	Connection-making Important vs Interesting details	Visualizing modeling	Look for a pattern Connection-making	Connection-making Visualizing Inferring from a graph
<b>Teaching Strategy</b>	Input-Output Machines Pattern rules	Build and isolate the change in a growing pattern Construct meaning through modeling	Describing patterns using expressions (variables, constant)	Graphing relationships, T chart, model, expression and graphs
Carole Saundry, 2007				

## Stage 2: Assessment Plan

Performance Task(s)	Other Evidence
-Transfer to a new context  - Real world situation	- All other forms of assessment

# Science 6/7 Ecosystems

## Performance Task

-Mini documentary in partners using imovie and Garageband (prep requires story board and script)

-Reflection/response to an article

## Brainstorm

What what we are looking for in the essay for your final projects?

## Unit: English 8- Friendship



### Performance Tasks

Summative  
Assessment

**-In-class writing:  
“Why I need good  
friends” Poem**

**-Visual Definition of a good  
friend:  
Definition, symbol,  
explanation and images**

**- Reflection on  
students’ learning  
through the term:**

Formative  
Assessment

**- Connect: discuss topic  
using graphic organiser**  
**- Process: Collect ideas in 4  
quadrants**  
**- Student reflection on  
learning, ideas, info etc.**

**-students present  
representation in small  
groups**  
**- students self assess in  
relation to criteria**  
**- peers provide feedback**

**- Praise, question, polish  
organizer**  
**-Students collect evidence of  
learning in learning log**  
**-Students set goals for next  
term**

## Unit: English 11- Communication and Technology

### Performance Tasks

Summative  
Assessment

**- personal essay: How  
communications technology  
impacts me personally**

**- create a video, blog or radio  
on how communications  
technology affects humanity/  
society/other groups**

**- Reflection based on  
metacognition journal work**

Formative  
Assessment

**-Personal essay:  
How does YouTube affect  
behavior**

**-Communications  
Technology timeline:  
-Quickwrites, class blog,  
group discussions,  
information circles, articles  
on impact of technologies**

**- Metacognition journal every  
3 weeks**



## Some Examples Residential Schools

Formative	Summative
<ul style="list-style-type: none"> <li>- Ideas students collected in 4 quadrants</li> <li>-student reflections on ideas from texts (info, poetry, art, memoirs) read</li> <li>-student self-assessment in relation to criteria</li> <li>-criterion-referenced conferences with draft writing</li> <li>-praise, question, polish organizer</li> </ul>	<ul style="list-style-type: none"> <li>-final version of a newspaper article</li> <li>-artistic representation of poem, explain of meaning and techniques and reflection own learning</li> </ul>

## How students integrate & apply what they learn



- Incorporate key concepts and relevant skills into product design
- Encourage student choice as part of the product design
- Products should involve students in relevant and valued activities
- Teach students skills necessary to successfully complete product
- Use multiple criteria to assess the product
- During and after product completion, encourage students to reflect on their learning

Stop and talk...



Brainstorm some summative assessment ideas for your unit

**Unit:**

Performance Tasks



Formative  
Assessment

Summative  
Assessment

A large, empty rounded rectangular box intended for students to write their brainstormed summative assessment ideas.

The crux of successful lesson study is to plan, observe and discuss the research lesson in ways that strengthen the pathways of learning for teachers and students.

**Lesson Study**

In lesson study, teachers work together to...

- form goals for **student learning** and long term development
- collaboratively** plan a lesson designed to bring life to immediate and long term goals
- teach the lesson with one or two team member teaching and others gathering **evidence** of student learning
- discuss the evidence gathered during the lesson, using it to **improve** the lesson, the unit and overall instruction

**Lesson Study**

**EQ: How are ecosystems impacted by our actions?**

Key concepts

- characteristics of ecosystems
- respect for the environment
- factors that affect the global distribution of biomes
- effects on living things within an ecosystem resulting from changes in abiotic factors

Important skills or processes

- identify** effects
- assess** human impact
- identify** the main points in a science related article or illustration (determine importance, infer, compare, evaluate, make connections)

**Connecting** (eg. Engage/Activate prior knowledge/ Predict content/ Focus on a purpose)

- What are the characteristics of a biome?
- See what else you can find in the sources (website/folders) to help you with the task – add to your thinking page
- Give 10 minutes to gather more information (books, articles, websites).
- Table Talk: Fact trade and agree on 3-5 defining characteristics.
- Report out/debrief: Most important defining characteristic. Explain why.
- How might characteristics and living things be connected in your biome?

**Processing** (eg. Construct meaning/Monitor understanding/ Process ideas)

- Pose the challenge: find out about human impacts on your biome.
- Give 10 minutes to gather information (books, articles, websites).
- Table talk: Fact trade.
- Report out/debrief: Determine, highlight and report out: Pick a human impact on your biome and describe it.

**Transforming & Personalizing:** (eg. Synthesize ideas/ Apply knowledge/ Reflect on thinking and learning)

- What do you know?
  - What questions do you have? How can we find out that info?
  - Represent a human impact on your biome
- Pose question: Why should we care about what happens in our biomes?

**Guest teachers...in our biome!**

**including...  
Mr Schnellert**



**What are the characteristics  
of a biome?**

**See what else you can find  
in the sources (website/folders)  
to help you with the task**

**– add to your thinking page**

**Table Talk:**

**Fact trade and agree on 3-5  
defining characteristics**

**Large group:**

**Share and discuss** most important  
characteristics of your biome

Why?

**Impact**

**What is life like there?**

**What are humans doing to  
the area?**

**Using pictures, diagrams or a  
web show how humans are  
impacting the environment**

**Essential Question**

How are ecosystems impacted by our actions?

**Summative assessment**

Describe the impact of human actions on the biome of your choice. Assess the effect of the impact on the ecosystem.

**Important Skills or Process**

Thinking skills needed: determining importance, inference, comparison, evaluation, making connections

**IRP Connections**

- identify the main points in a science related article or illustration
- abiotic and biotic elements in ecosystems
- ecosystems with similar characteristics in different geographical locations
- effects of altering an abiotic factor
- assess human impact
- show respect and sensitivity for the environment
- identify factors that affect the global distribution of biomes
- identify the effects on living things within an ecosystem resulting from changes in abiotic factors

**Previous lessons**

- Student have learned about the abiotic and biotic elements that make up biome and the key factors that affect their distribution. (Notetaking charts, partner talk, video, websites, books)
- Students have discussed the impact of human activity on a temperate rainforest (as a whole class with teacher, using the framework they will use for their own biome).

**Big Ideas**

key concepts/essential understandings

Essential question...

**Student Outcomes**

Important skills or processes

Students will be able to...

Connecting

Purpose: Engage/Activate prior knowledge/ Predict content/ Focus on a purpose:

Processing

Purpose: Construct meaning/Monitor understanding/ Process ideas

Transforming & Personalizing

Purpose: Synthesize ideas/ Apply knowledge/ Reflect on thinking and learning

Brownlie, Feniak & Schnellert, 2006