Grade Level	Content Area	Course Title *(9-12 Samples Only)*	Unit Title
Kindergarten	**Math**		**Everyone Needs a Rock**

Length of Unit	Time of Year Taught	Expected Prior Knowledge
Two weeks (One week shown here)	**2nd Quarter**	Beginning counting and pattern making

Unit Description

After two weeks of focus around this unit, students will have found connections through multiple subject areas. In math, pattern making, using representations, and considering basic formulas will fill the curriculum. A variety of activities, a focus on skills, the use of manipulatives, and making daily connections outside the classroom will enrich and engage all students. The teacher will use workshops, direct instruction, centers, and play to lead learning and excite students about math.

Strand(s), Concept(s), and PO(s) *List and define the required Strand(s), Concept(s), and PO(s) for each lesson included in this sample.*	**Strand 3:** Patterns, Algebra, and Functions **Concept 3:** Algebraic Representations: Represent and analyze mathematical situations and structures using algebraic representations **Performance Objective 1:** Record equivalent forms of whole numbers to 10 by constructing models and using numbers.
Summative Assessment *Describe a cumulative and comprehensive activity that allows students to demonstrate mastery of stated POs. A copy of the summative assessment must be included in the application package.*	Kindergarten students have the ability to solve and explain rigorous activities, but many do not yet have the writing ability to translate those thoughts onto paper. For the purposes of this activity, students will display their knowledge about the math content by completing a performance task assessment as well as an individual selected response assessment. Performance Task Assessment: Students will work one-on-one with the classroom teacher in order to demonstrate their ability to represent single-digit numbers using objects. The teacher will show the student a single-digit number and ask the student to use rocks to represent that number. The teacher will use a checklist to record data information as students demonstrate their understanding. Selected Response Assessment: Students will use pictures of rocks (connecting the science content to their math standards) to complete a repeating pattern that has been started but not completed. Students will be able to choose pictures to cut out and glue down to the paper in order to correct complete the repeating pattern.
Assessment Scoring *Explain how each assessment*	For the performance task, the teacher will use a checklist (attached) in order to score student responses. If grading for standards-based mastery, the teacher will simply look to see if students answer multiple questions that reach the

is scored, to include points per question, total points possible, criteria, and grading scale. Describe rubric, if applicable, to include components being evaluated and the scoring criteria for each. A copy of the answer key and/or scoring rubric must be included in the application package.	learning target. If using a points-based grading system, the teacher may assign each point to each question and track points. For the selected response assessment, students will receive one point for each correctly placed picture to complete the repeating pattern. This will be completed individually and will thus not have a verbal explanation component. A score of 100% will be expected for mastery of the learning target.
Materials/Resources Needed *(Include all items for the entire unit.)*	• Chart paper and markers (for anchor charts) • Sets of rocks for students to handle and study • Rock vocabulary word cards with pictures (for visual word wall) • Connecting cubes • Repeating Pattern Recording Form (see attached) • Field Work Recording Form (see attached) • Digital camera (for both student and teacher use) • Teacher checklist for performance-based assessment (see attached) • Fill-in-the-Blank pattern assessment (see attached) • Expository (non-fiction) resource texts at appropriate reading levels for student use

	Lesson 1	**Lesson 2**	**Lesson 3**	**Lesson 4**	**Lesson 5**
Lesson Instruction	1. Students will participate in a Building Background Knowledge activity that helps introduce expedition vocabulary and allows students to explore new materials. 2. Students will be given a set of rocks to explore individually. Students will be encouraged to	1. Students will be guided through a workshop model lesson plan involving the creation of repeating patterns. (Learning Target: I can create a repeating pattern.) After active participation in a mini-lesson (where the teacher provides direct instruction) and guided practice (where students	1. Students will experience a real-world field work experience where they are asked to investigate their surroundings and look for rocks in their environment. (The classroom teacher should consider which environment is used for this particular study: somewhere that	1. Students will rotate through learning stations while the classroom teacher checks for understanding and provides additional instruction for any students who need guidance. Station 1: Connecting cube patterns- students	1. Students will review concepts covered throughout the week by revisiting the Building Background Knowledge anchor chart, expedition word wall, field work reporting forms, and pictures/templates

	use their four of their five senses (touch, sight, smell, sound; just not taste) to explore the rocks. After a few minutes of individual exploration, students will be asked to pair up with a partner and practice using the "I notice…" "I wonder…" protocol. 3. Students will have an opportunity to share some of their notices and wonders with the class while the teacher records these thoughts on an anchor chart (stationary chart that is on display.) This chart will be displayed in the classroom and students will be encouraged to refer back to their "notices" and to try and answer some of their "wonders" throughout the expedition. 4. Students will start to discuss important vocabulary terms for the unit and will create an "expedition word wall."	work together to solve sample problems) about what a repeating pattern is, students will be asked to make their own repeating pattern and record it on a template. Students will have connecting cubes to use as manipulatives (math materials), and they will also be encouraged to collaborate with a partner should they choose. Differentiation will occur once students have checked in with the teacher: students who complete the task quickly and correctly will be given additional colors to use to increase the difficulty of the pattern(s) and will be challenged to create different types of repeating patterns (such as AB, AABB, ABC, etc.) Students will explain their drawn patterns to a partner and turn their work into their teacher at the end of the	is close enough to the school that students may be familiar with their surroundings in order to make a community connection, but somewhere that also offers enough content connections in order to be a valid choice for field work. Possible examples would include a local community park or even on the grounds of the school.) 2. Students will carry a clipboard and recording sheet during their field work experience on which they will be asked to draw and label rocks that they see. Once students return back to their classroom, they will share and organize their data in order to best use their field work experience. (Another anchor chart could be created, student work could be scanned and turned	will use the same template as on day 2 to continue to make repeating patterns first using connection cubes, and then drawing those cubes on a recording sheet. Station 2: Number correspondence- students will have the ability to play their partner game from day 1 together with a partner to reinforce the concept of recording equivalent forms for numbers. Station 3: Pattern challenge!- students will be given a variety of manipulatives (shells, buttons, magnetic letters, etc.) to use to create their own repeating patterns and will use a digital camera to take pictures of their work (to be displayed in the classroom.) Station 4: Teacher station- the classroom teacher will pull students who need	created during station work. 2. Students will be asked to verbally provide examples about patterns that they have learned about and/or created during this expedition, and share thoughts about other ways that patterns and numbers can be found/play a role in their daily lives. 3. Students will participate in a one-on-one summative assessment where they meet with the teacher and are asked to demonstrate how to represent a number using rocks and the second ("fill-in-the-blank") assessment will ask students to use pictures of rocks to fill in missing pieces of repeating patterns. The second activity will

	This word wall will be made up of important vocabulary words and pictures that match the words (so that students can make the visual connection.) 5. Students will complete the lesson by playing a partner game that requires students to hold up a card with a single-digit number on it, and then ask their partner to display that number of rocks. (Matching numbers to equivalent values.) Students will play the game taking turns with their partner.	workshop. A possible extension activity (or something that could be completed should there be extra time or a parent volunteer) would be another workshop using rocks that touches on a different math standard: sorting and classifying. Extension workshop: Students will be guided through a workshop model lesson plan involving sorting rocks according to common attributes. (Learning Target: I can sort objects by their common attributes.) After active participation in a mini-lesson and guided practice about how to sort objects, students will each be given a small bag of rocks that they will be asked to sort by attributes. Differentiation will	into a slide show, or field work recording forms could be collected and displayed within the classroom.)	additional assistance (as measured by teacher observation and work turned in from workshop day 2) and review the concept of creating repeating patterns in a small group setting.	be completed individually and returned to the teacher for grading and reporting. 4. While students are being assessed, the other students in the classroom will be asked to draw and label a connection they have to patterns and numbers in their world. 5. If students finish this activity and there is still time remaining, they will have access to non-fiction texts about rocks that they can use to “search and flag” for expedition vocabulary words.

		occur according to which bag of rocks each student is given: some students will receive bags with very clear, distinct features while other students will receive rocks that are a bit more challenging to sort. Students will be asked to verbally explain their thinking to their table mates or partners after they have decided how to sort their rocks.			

	Lesson 1	**Lesson 2**	**Lesson 3**	**Lesson 4**	**Lesson 5**
Student Activities	1. Students will verbally participate in an "I notice…" and "I wonder…" protocol that requires them to analyze what they see and share their thoughts with their classmates. 2. Students will assist in	1. Students will participate in a workshop model lesson where they will create their own repeating patterns using connecting cubes. Students will begin with a simple two-color repeating pattern but will	1. Students will participate in a real-world field work experience where they will be asked to identify and record rocks they see within their environment. 2. Students will be	1. Students will rotate through learning stations where they will complete activities based upon their math standards linked to science content: Station 1- connecting cube patterns (review	1. Students will participate one-on-one with the teacher to complete a performance assessment where they will be asked to represent a single-digit number using rocks.

	the creation and continuous adding of words to an “Expedition Word Wall” to be displayed in the classroom. 3. Students will play a game with a partner where they identify and represent single-digit numbers.	have the opportunity to increase the difficulty of their own pattern according to their personal comfort level with the specified learning target. 2. Students may (if time allows) participate in an extension activity where they will be asked to sort rocks according to common attributes. Students will use their rocks from the previous day’s introductory lesson to sort and then explain their thinking to a partner.	encouraged to make connections to their community by researching in a local environment. 3. Students will be asked to share and interpret the class’ data upon returning from their field work experience.	activity of day 2’s lesson) using the repeating pattern recording form (see attached.) Station 2- rock picture patterns (creating repeating patterns using photo-copied pictures that students drew on their field work experience on day 3) Station 3- creating patterns using math manipulatives (shells, buttons, etc.)	2. Students will be asked to apply their knowledge of patterns by filling in missing pieces in a simple (AB) repeating pattern using pictures of rocks. 3. Students (while they are not being assessed) will draw and label a connection they have to rocks in their environment. 4. If time allows, students will go on a “word hunt” through non-fiction texts (about rocks) where they will “search and flag” vocabulary words. (“Searching” entails looking for the words, and “flagging” means tagging or marking the page with a sticky note.)

Name _____ Date _____

Repeating Pattern Recording Form

I can create a repeating pattern.

Directions:

Use connecting cubes to make a two-color repeating pattern, and then draw your pattern in the boxes below. If you have time for another pattern, use the boxes at the bottom of the page to show it!

Pattern 1:

Pattern 2:

Name _____ Date _____

Fill-in-the-Blank Pattern Assessment

I can create a repeating pattern.

Directions: using the pictures below, please fill in the missing pictures in this repeating pattern. Cut out the pictures at the bottom of the page and then glue them into the correct spaces to complete the pattern.

_____ _____

Pictures to Cut Out:

- -