



Geology: Tools of the Trades

Rocks & Minerals Unit



Standards Covered

ELA	Math	Science	Social Studies
RI.6.7, W.8.8	6.NS.6, 6.NS.8	6.ESS.5, 7.PS.1, 8.ESS.4	SS.7.14, SS.8.16, SS.7.1, SS.8.15, SS.6.3, SS.6.4, SS.6.6, SS.7.13, SS.6.3,



Vocabulary

See unit vocabulary folder and *Geology Tools* vocabulary files



Text Set

See *Rocks and Minerals Text Set* from the OCALI Lending Library

Note: this kit will be updated soon – print packing list after updated



Materials

Materials for these lessons will be linked within the weekly/daily outline



Teaching All Learners Center



Instructional Outline

Week One – What is geology? What do geologists do?

Day 1 - Pre-assess geology tools vocabulary

Vocabulary: See geology tools list

Day 2 - Unit introduction: Provide students with vocabulary images, half index cards with hole punched in corner and metal clip ring. Combine to create vocab. card ring for geology tools. Bring out actual tools to handle and explore as new words are introduced. Pack the geologists backpack with new tools as new vocabulary is introduced.

Day 3 – Watch overview video [What is geology?](#) AND see an overview of what some geologists do in the field. [Geologists get up close and personal with ROCKS!](#) Are there geologists in our local area? Where to they work? Names and contact info.? As a class students use Google Maps to search by topic and distance. Invite local geologists to visit the school to share about their work or go to their place of work to visit them and observe them working in the field. Students collect “notes” about what is shared or observed and add to individual *Guest Speaker note sheet*. (see folder)

Day 4 – Geologist for a Day

Geology is the scientific study of the Earth. It includes many fields of study and work.

- Physical geology - Resource exploration (e.g. mining rock and minerals)
- Assessing hazards (e.g. natural disasters such as earthquakes, landslides and tornados)
- Historical geology (e.g. search for fossils and exploring Earth’s layers to develop historical records)
- Climate studies (e.g. climate change)
- Environmental geology - Conservation and Remediation (e.g. waste removal, contamination clean-up)
- Engineering projects (e.g. dams, tunnels, bridges)

Whole group or lab centers – Pick from many geology lab experiments:

<https://www.sciencebuddies.org/science-experiments/geology/middle-school>



Day 5 – Geology in the field

Hands on opportunities to use tools and explore the ground below our feet. Head into the community to locate a local “dig site”. Reference a map to locate where to place grid stakes indicating where to dig. Materials: 4 short stakes, string to surround the site, clear rectangular tub with lid, geology tools backpack, geology *dig data sheet*. See *folder for Geology Dig Data Sheet* which can be filled in by a peer or school staff member with student responses/choices.

If a true dig site is not available this activity can be simulated using a clear tub and some simple materials. [See Shoebox Dig Simulation Directions with photos.](#)





Pre and Post Assessment

Included in the unit plans:

- ☐ Work sample with checklist, rubric, or notes
- ☐ Learning progressions (task analysis) rubric
- ☐ Diagnostic data – specific skill set:
- ☐ Project with rubric

Could be added to the unit plans:

- ☐ Captioned photos
- ☐ Test or quiz in accessible format
- ☐ Audio or video recording with data sheet
- ☐ Benchmark assessment formatted like alternate assessment
- ☐ Other






Providing All Students Access

When planning tools and supports, consider adapting and expanding teaching materials, student materials, technology, and curricular resources.

Student specific supports and services across the tier aligned to this lesson should be pulled from the IEP, RIMP, gifted, 504 plan, behavior plan, EL plan, diversity profile, etc. Consider assistive technology, instructional strategies, and environmental adaptations.

Designing to the Edges (Tip to Tip)

Universal Tools and Supports	Activity Specific Multiple Means & Differentiated Tools	 Student Specific Supports & AT (*add student initials or code to note individual student supports or SDI)
Examples include: <ul style="list-style-type: none">• Learning Progression rubric to track own skill development• Test format like AA• Manipulatives• chunking of tasks/items• access to sensory breaks• cues to refocus attention to task• instructions and/or text read aloud	Examples include: <ul style="list-style-type: none">• social stories• verbal and/or visual models with appropriate social and transition skills (ex. hands to self, sit in seat, wait in line)• preferential/flexible seating in the classroom to minimize distraction while working on academic tasks• verbal and/or picture prompting to task	Examples include: L- <ul style="list-style-type: none">• flexible seating choice• deep pressure touch i.e. weighted blanket and/or weighted vest as needed, heavy work activities• sensory chew toys T- <ul style="list-style-type: none">• customized seating



<ul style="list-style-type: none"> • goods and services T chart with sorting cards with pictures and words on each card 	<ul style="list-style-type: none"> • instructions and/or texts read aloud • Pictures, visual cues for reading • Boardmaker picture cues 	<ul style="list-style-type: none"> • presentation of communication symbols on the left in a vertical array • choice making with voice output single message switches
<ul style="list-style-type: none"> • videos with CC • music • map of Ohio • transition supports music, movement, objects/materials 	<ul style="list-style-type: none"> • multiple choice selection from an array of word or word+picture choices • manipulatives • flexible seating options • tactile/object choices • sensory supports • reteaching as needed • redirection as needed 	
<ul style="list-style-type: none"> • repetition of instruction • verbal and/or visual cues • visual/auditory timer • Manipulatives • Modeling • information broken down, segmented • chunking of tasks • access to sensory breaks • cues to refocus attention to task • instructions and/or text read aloud 	<ul style="list-style-type: none"> • social stories • verbal and/or visual models with appropriate social and transition skills (ex. hands to self, sit in seat, wait in line) • preferential seating in the classroom to minimize distraction while working on academic tasks • verbal and/or picture prompting • instructions and/or texts read aloud • Pictures, visual cues for reading • Boardmaker picture cues 	<p>C-</p> <ul style="list-style-type: none"> • flexible seating choice • deep pressure touch i.e. weighted blanket and/or weighted vest as needed, heavy work activities <p>D-</p> <ul style="list-style-type: none"> • Wiggle cushion <p>R-</p> <ul style="list-style-type: none"> • reinforcers <p>J-</p>



<ul style="list-style-type: none"> • adult support to increase independence in the school environment and during classroom tasks • Paraprofessional to model appropriate behavior, facilitate academic tasks, implement de-escalation strategies 		<ul style="list-style-type: none"> • adult/peer modeling of appropriate behavior/ appropriate social communication • adult/peer modeling/facilitation for calming strategies • Personal communication device • LAMP- Words for Life program for communication <p>T-</p> <ul style="list-style-type: none"> • visual models for correct way to form letters and numbers • picture cues to aide in comprehension <p>W-</p> <ul style="list-style-type: none"> • visual model for writing
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