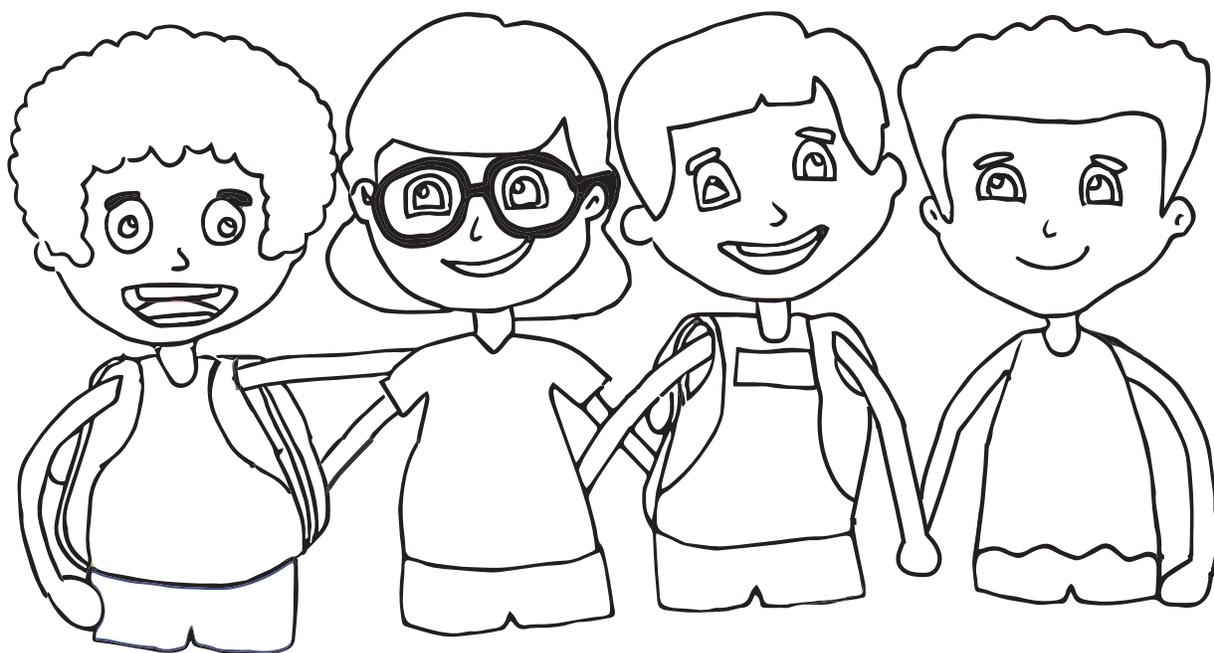


Minerals of Alberta Activity Book



Geologist's Name: _____



UNIVERSITY OF ALBERTA
FACULTY OF SCIENCE
Department of Earth & Atmospheric Sciences

MINING FOR MINERALS

M E T A L L U R G I C A L M G
X T R Z K G Q D X J H Z T U O
M C C T E I L S N S Y M I I L
R U L A T N B T L O A W J H D
B A P E A T E A I M M V Q T F
S E F P G F E X M Y P A S I A
S L N U N P C O E H T A I L U
D T R T T W L K S H N S F D I
I W O E O I G I T D L R A M O
L Z A N T N J P O Y W T L X W
W M O E E G I R N L S E L F Z
S U L F U R M T E C V R A W Y
E T I M O L O D E A L W O Z Y
V U G H L E N K R O R X C S O
F T Y R Q R D G L M W N U J S

Find the following mineral names in the puzzle above.

A word may be written forward, backwards, up, down, or diagonally.

AMMOLITE	MARL
BENTONITE	METALLURGICAL
COAL	PEAT
DIAMOND	SALT
DOLOMITE	SAND
GOLD	STONE
GRAVEL	SULFUR
LIMESTONE	TUFA
LITHIUM	

Q: What do you call a dog that collects rocks?

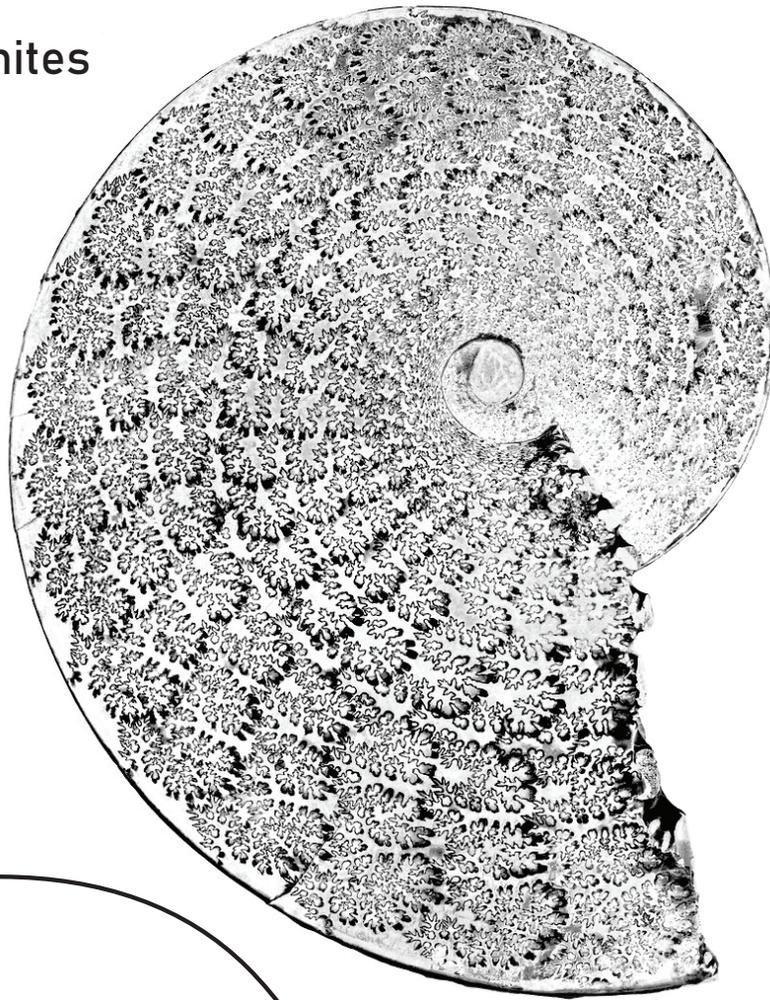
A: A rockhound!

People who like to collect rocks are also called rockhounds.

Are you a rockhound?

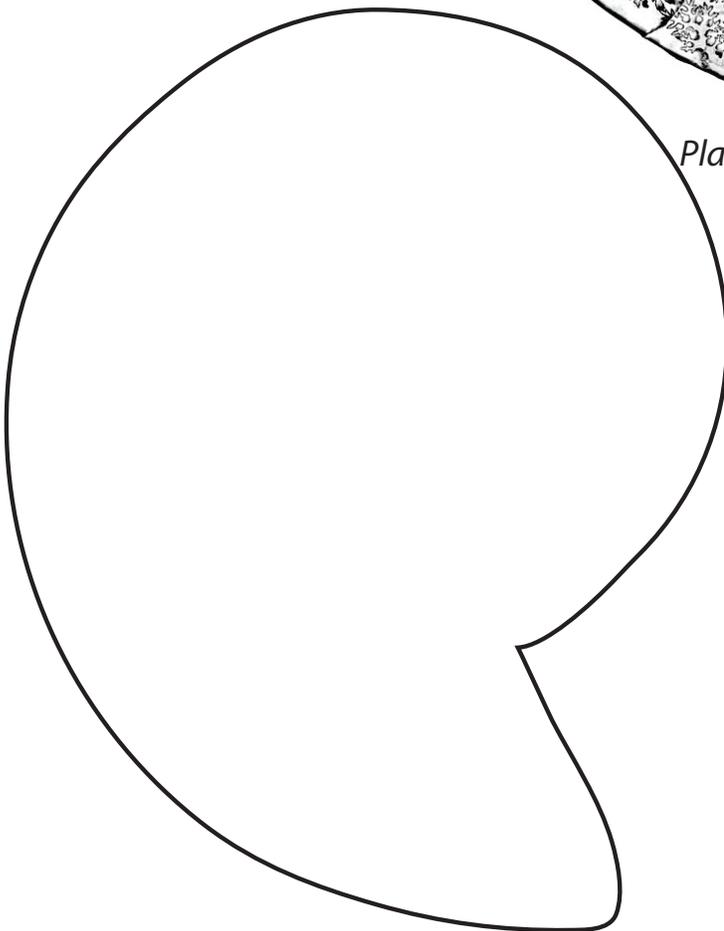
Amazing Ammonites

Ammonites have chambered shells. The pattern you see here is created where the wall between chambers touches the outer wall of the shell. The soft part of the animal was in the biggest, and newest, chamber of the shell. Only a thin tube, called the siphon, went into the older chambers. It functioned to add and remove water to control the animal's buoyancy.



Placenticerus whitfieldi

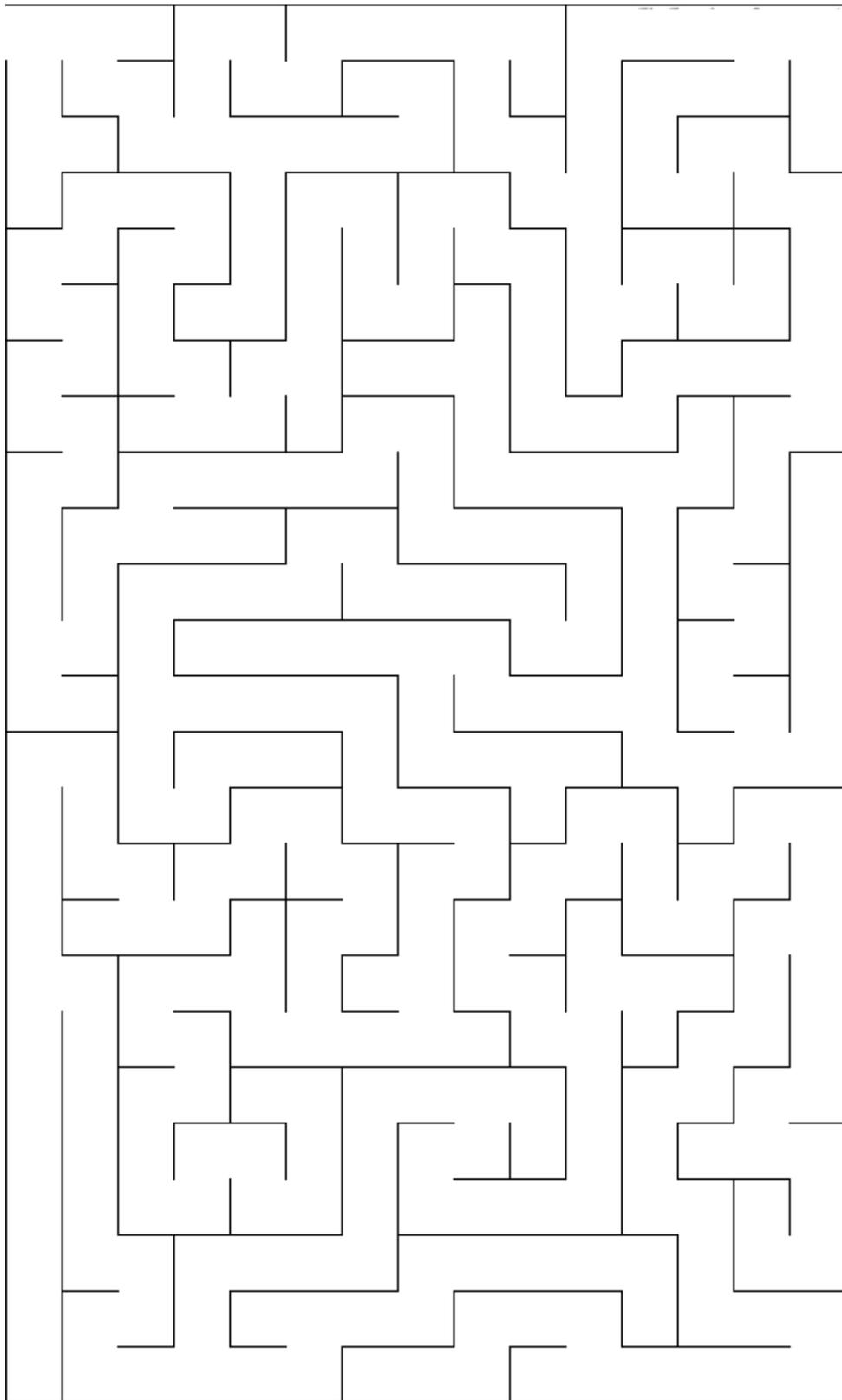
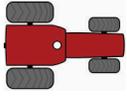
The soft body of an ammonite looked kind of like an octopus. Draw the soft part of the animal sticking out of the shell.



Colour the ammonite the colours of ammolite. Remember that ammolite can have all the colours of a rainbow.

Baculites compressus





Puzzling Peat

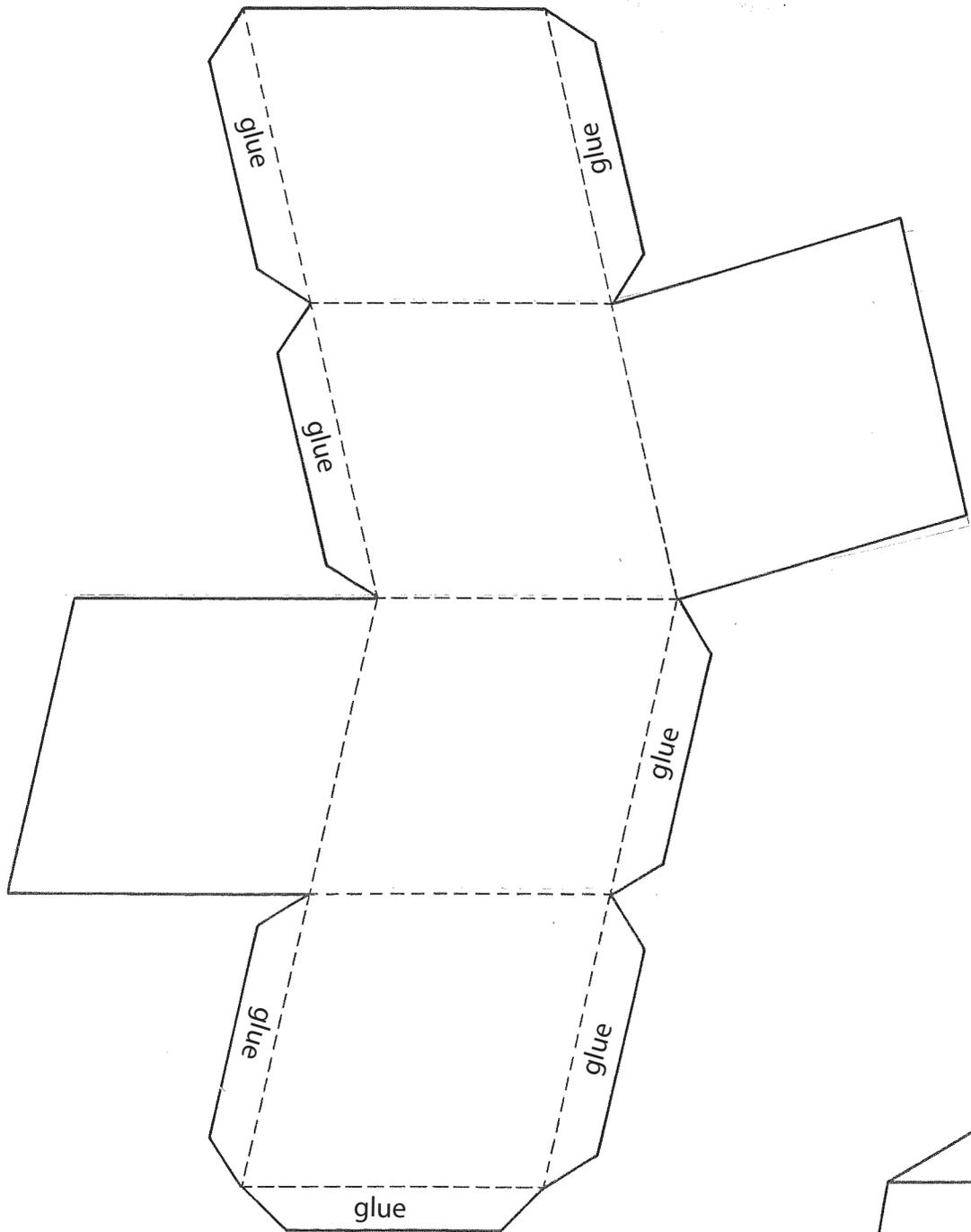
After peat is harvested, the land looks a lot like a farmer's field. Make your way through the maze to get out of the harvested peatland.

Q: What do you call an alien that lives in a bog?

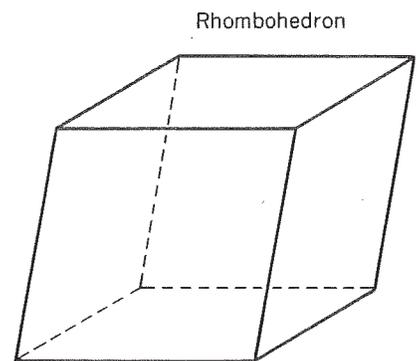
A: A marsh-in.

Calcite and dolomite crystals

Minerals have different crystal shapes based on their molecular structure. Calcite, what limestone is made of, and dolomite, grow as rhombohedra.



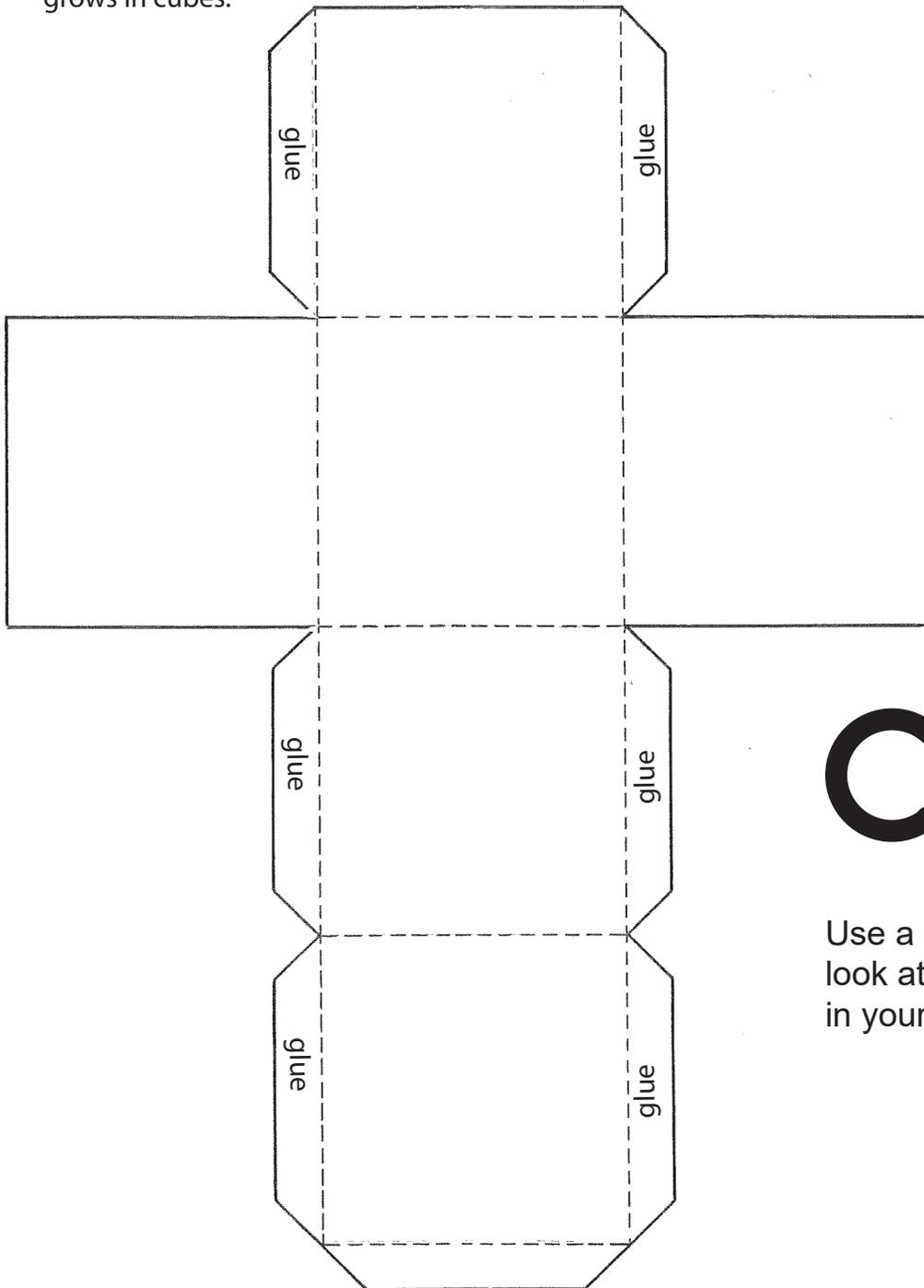
Cut on the solid lines. Fold along the dotted lines. Apply glue to the labeled ends and form the enclosed shape.



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Rock salt crystals

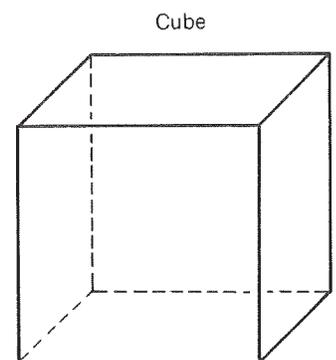
Minerals have different crystal shapes based on their molecular structure. Halite, the mineral in rock salt, grows in cubes.



Cut on the solid lines. Fold along the dotted lines. Apply glue to the labeled ends and form the enclosed shape.

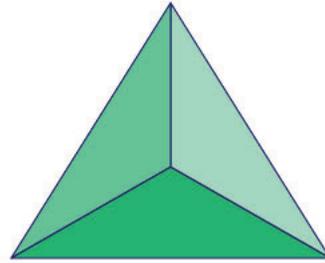
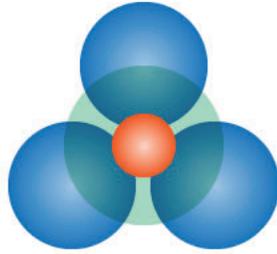
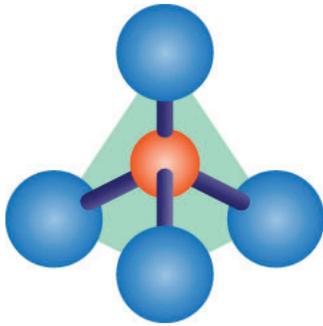


Use a magnifying glass to look at the cubes of halite in your salt shaker.

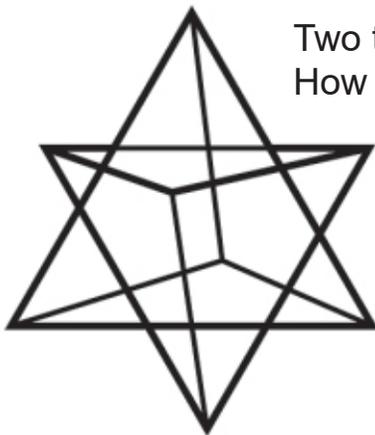


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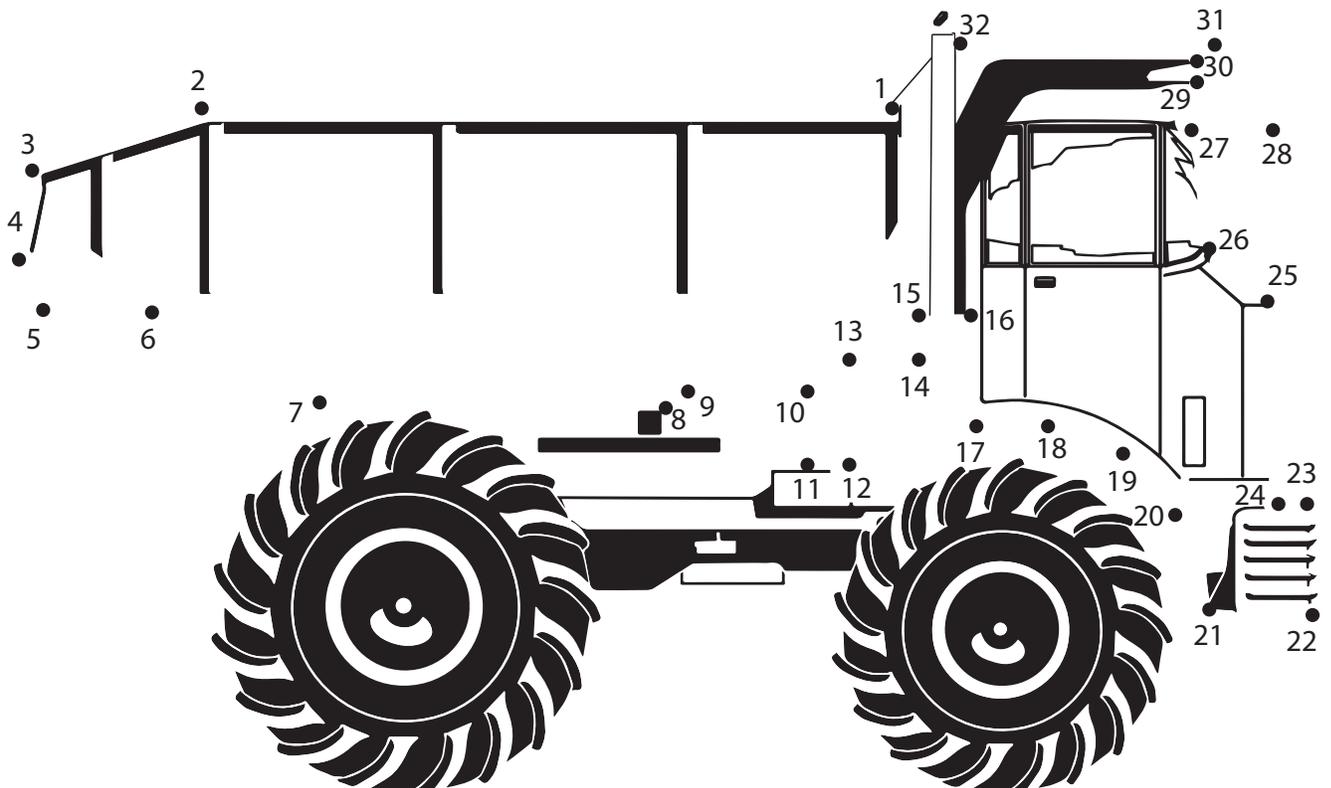
Troubling Tetrahedra



About 90% of minerals in Earth's crust contain molecules of silica. Silica is SiO_4 , meaning one silicon atom is bonded to 4 oxygen atoms in a tetrahedral shape. Quartz is a silicate mineral, and the most common mineral in sand and gravel. Diamond is mineral that involves 4 carbon atoms bonded in a tetrahedral shape.



Two tetrahedra have intergrown.
How many triangles can you find?



Connect the dots to find out what kind of truck is used to transport minerals.
What kind of truck is it? _____

Muddled Minerals

Unscramble the letters to spell mineral names. Fill in the numbered boxes below the puzzle with the letter in same numbered box in the puzzle to find out the secret message.

IOLATMEM

--	--	--	--	--	--	--	--	--

TALS

--	--	--	--

NEBTOETNI

--	--	--	--	--	--	--	--	--

TENSO

--	--	--	--	--

LALGITRALMUCE LAOC

--	--	--	--	--	--	--	--	--	--	--	--	--

--	--	--	--

GDOL

--	--	--	--

LEMTOISNE

--	--	--	--	--	--	--	--	--

LAVGER

--	--	--	--	--	--

MIDOAND

--	--	--	--	--	--	--

SUURFL

--	--	--	--	--	--

LARM NAD UTFA

--	--	--	--

--	--	--

--	--	--	--

AEPT

--	--	--	--

MIUHITL

--	--	--	--	--	--	--

1	2	3	4	5	6	7	8

9	10	11

12	13	14	15

Move those Minerals

Minerals are shipped all over the world. In the space below, draw one way that minerals can be moved on the ocean.

I Wonder....

Here's a list of other minerals found in Alberta.

Calcium chloride	Humalite	Potash
Clay and shale	Iron-vanadium	Rare-earth elements
Copper	Lead-Zinc Magnetite	Sodium sulfate
Fly Ash	Phosphate	Titanium-Zirconium
Gypsum		Uranium

Which mineral would you like to learn more about?

Do some internet research and answer the following questions about the mineral you chose.

Suggested websites:

The Alberta Geological Survey- <https://ags.aer.ca/>

Geology.com- geology.com

What is the mineral made of?

Where is it found?

What is it used for?

Draw a picture of the mineral you chose in the space below

More to Discover

UAlberta Earth Sciences Collections and Museums

<https://www.ualberta.ca/earth-sciences/facilities/collections-and-museums/index.html>

UAlberta Free Online Courses

<https://www.ualberta.ca/admissions-programs/online-courses/index.html>

UAlberta Faculty of Science Camps

<https://www.ualberta.ca/camps/science/index.html>

UAlberta DiscoverE Camps

<https://www.ualberta.ca/engineering/community/discovere/index.html>

UAlberta WISEST

<https://www.ualberta.ca/services/wisest/index.html>

UAlberta Museums

<https://www.ualberta.ca/museums>