



Teaching *for*
TRANSFORMATION

Minerals: The Mother's Day Blessing Earth Science 8th

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Deep Hope:

My deep hope is that in Science my students will see the design of the designer, God, in the patterns we observe and in the creativity we exhibit because we are image bearers of the Most High God.



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Long Term Learning Targets:

- 🎯 I can explain how Earth's Materials (rocks, MINERALS, water) and tectonic plate movement are used in God's design to sustain life.
- 🎯 I can explain God's Story of a global Flood to account for the tectonic plate movement, the rock layers, the mineral deposits, and fossils found in the Earth's crust



Curricular Outcomes:

8

2 Looking at data and empirical evidence to understand phenomena or solve problems

2.1 Analyzing and interpreting data

2.1.1 Students will be able to represent observations and data in order to recognize patterns in the data, the meaning of those patterns, and possible relationships between variables.



Habit(s) of Learning:

Gracious Communicating

At the end of this unit, students wrote Mother's Day Blessings. We started the unit learning about Birthstones. That is usually the first mineral students are exposed to. Then they research their birthstone, learn what kind of mineral it is, and draw it. Then students communicate with their mom and write a Blessing to her.

If a student has lost their mom, they can choose to make a memorial or choose another significant woman in their life or both.



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See God's Story:

Minerals are needed in everyday life. Almost everything we use has been mined (or grown). Minerals are beautiful. They point to the beauty and creativity of our Creator. How did those minerals get there in that deposit? The competing idea is uniformitarianism and time is god.

God gave us the Earth to care for. "Use it well," He says. When students recognize how many minerals are out there, how beautifully patterned they are, and the need to use and care for the Earth, it helps them see that there is more than just their little pocket of world.



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Storyline:

“Designed” Genesis 1:1



**Designed
Genesis 1:1**

Throughlines:

Creation Enjoyer: Students see how minerals affect their daily life. You can look around and see the beauty of these crystals.

Order Discoverer: Minerals are crystalline and therefore have repeating patterns. As students learn that specific minerals have specific patterns they see that this isn't random. God creates for a purpose.



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Formational Learning Experience:

Real needs: Moms need to know their 8th graders love them

Real people: Moms- they pour into their kids' lives and 8th graders tend to not tell their moms how much they are appreciated, authentically.

Real work: Students researched their and their mom's Birthstones. Birthstones are minerals. Then they drew an example of the birthstone, told their mom all about the mineral, and then wrote a blessing to their mom.



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INVITE

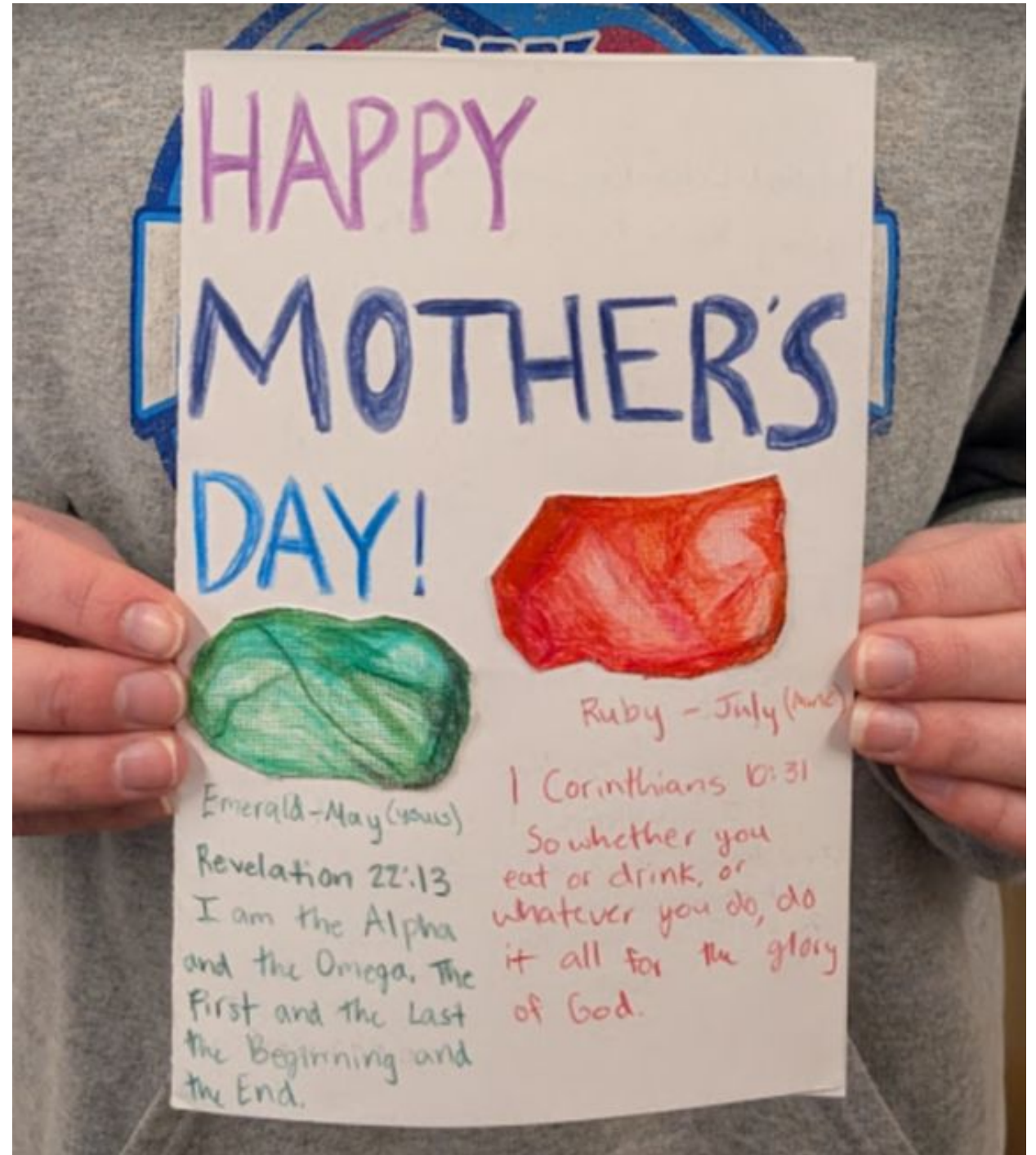
- I told them about the cards my son gave me and how much I treasured them and gave an example. Then we talked about how as an 8th grader they NEED to tell their mom how important she is to them.
- In the unit of minerals, you learned about God's creativity and design in the study of minerals for human use.



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NURTURE

- I asked them to pray for their mom and to ask for what to write to her.
- Many students really seemed to want to write to their moms and express their feelings.



Happy Mothers Day!!!

Philippians 4:13 "I can do all things through Christ which strengthens me."



Topaz



Topaz

Proverbs
31:28

Her children arise
and call her blessed;
her husband also, and
he praises her.

Topaz

$Al_2Si_2O_7(F,OH)$

It is a silicate mineral with a Mohs
scale hardness of 8.

It comes in a variety of colors
such as colorless, Yellow, Blue, Pink, Red,
Green, Golden Brown, and Champagne.

It was believed to have healing and strength.

It is used in jewelry and for tools.

It has a glassy luster.

It is a crown jewel and is passed
through the royal family in Portugal.

The name originates from the
Greek word topazos which means
"to seek" or "to find".

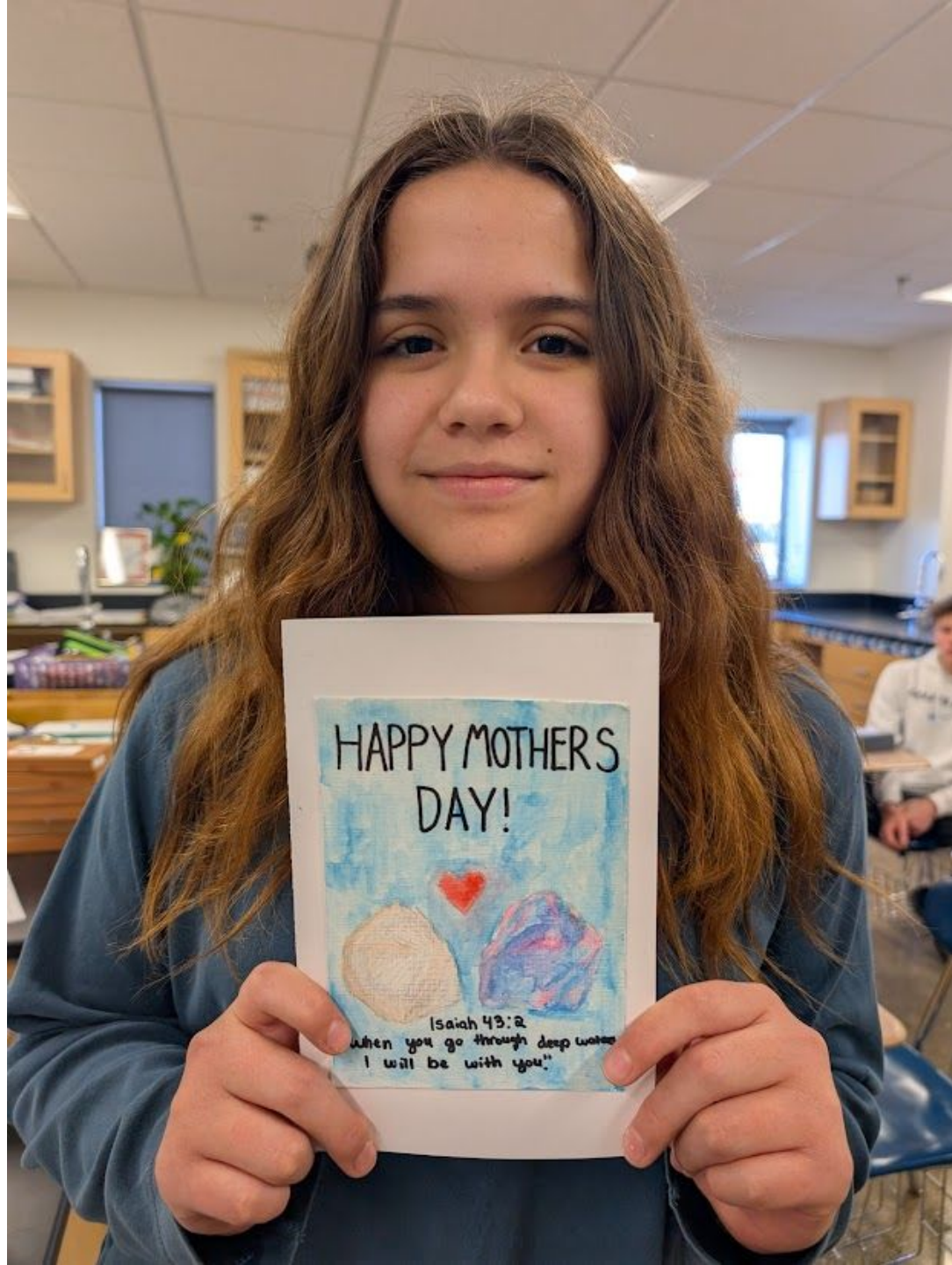
It is sensitive to heat because
it has perfect cleavage.

It is a stone of love. ❤️

Dear Mom,

I want to thank you for all that
you do for me. When writing this card, I
chose pink for the color of the topaz because
it is rare and similar to you, because you
are one of a kind. The topaz is raw
because you are sweet and genuine.
Topaz suits you because it represents
healing, your kindness and caringness, and
strength, your physical and mental strength.
Topaz has a glassy luster, representing
how you shine everywhere you go. Topaz
means to seek or find which is what
you do everyday. You always go out of
your way to find solutions to problems
to help other people. Topaz is a stone
of love, which is what I have for
you.

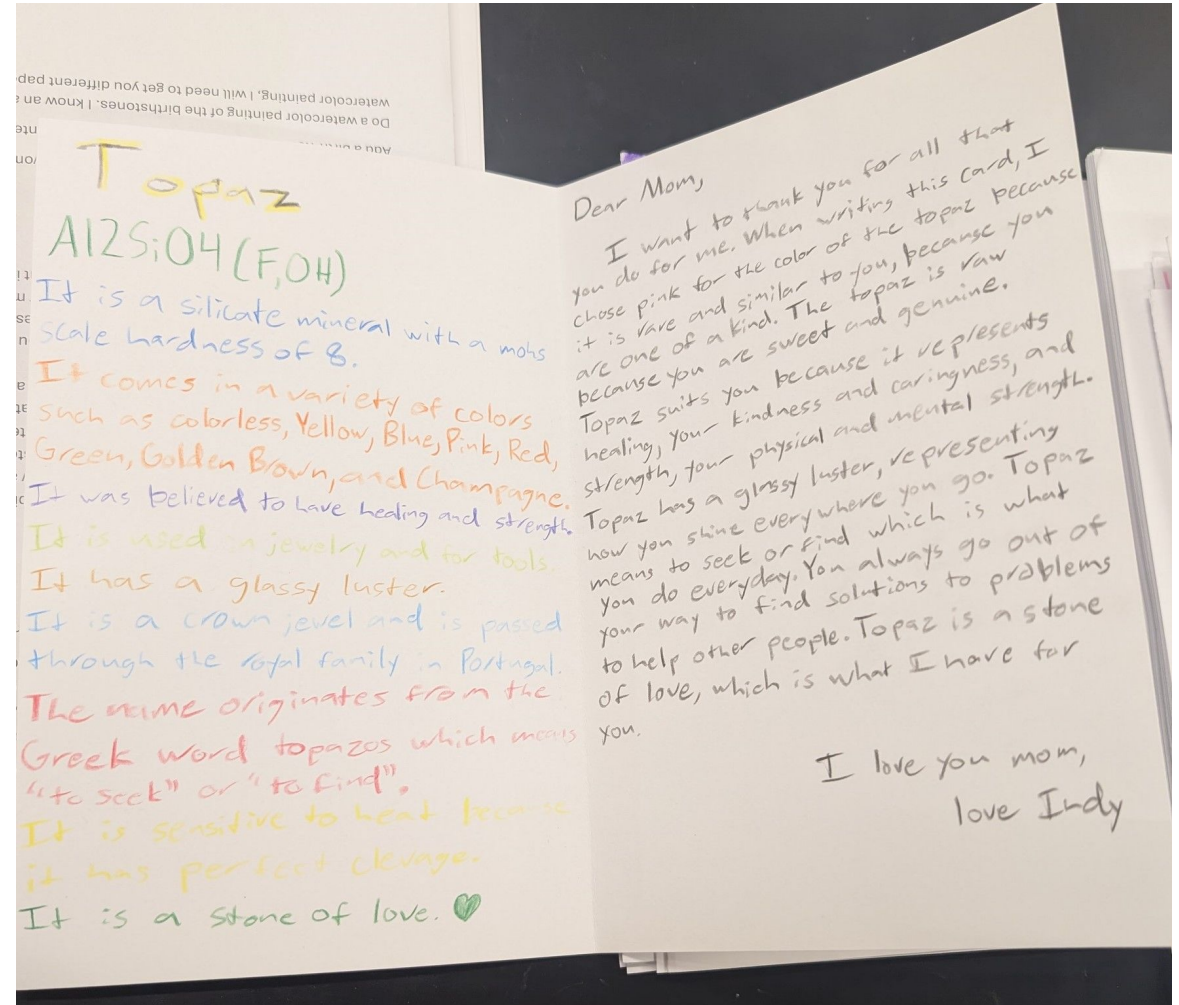
I love you mom,
love Indy





EMPOWER

- The students really enjoyed this. They seemed to feel like they needed to tell their mom more often how important she is.

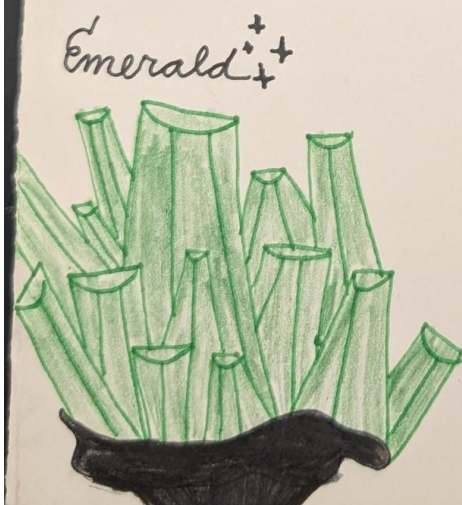


Happy Mother's Day
Happy Mother's Day
Happy Mother's Day

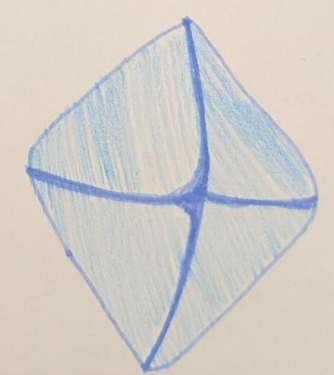
Emmy R.

To him who is able to keep you from stumbling and to present you before his glorious presence without fault and with great joy - to the only God our Lord, before all ages, now and forevermore! Amen.

1-2-3-4-5



Diamond



Chemical Compounds

Diamond: Carbon Emerald: Beryllium Aluminum Silicate

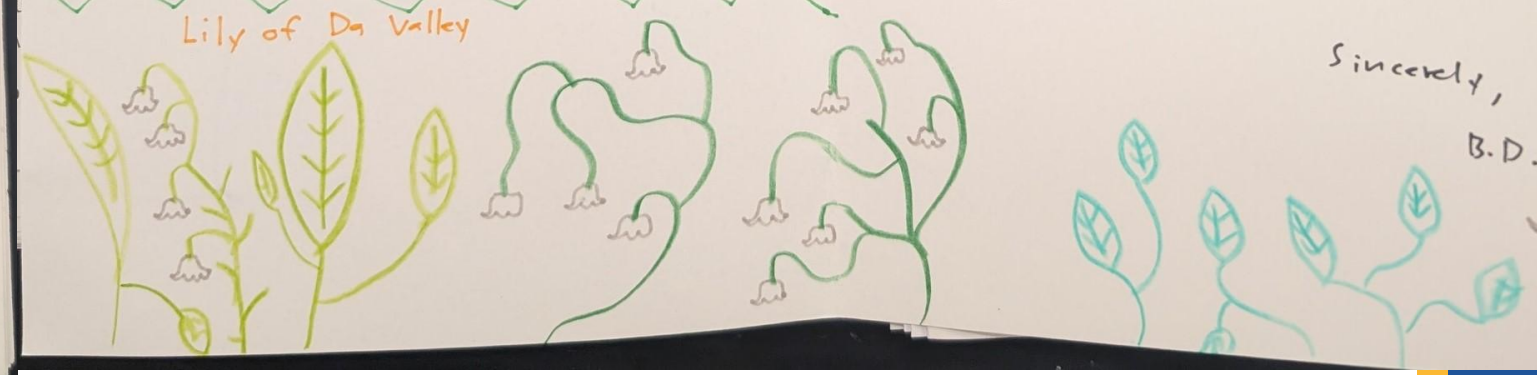
Chemical Formulas

Diamond: C Emerald: $Be_3Al_2(SiO_3)_6$

Facts:

- 70-90% of emeralds are found in Columbia, but they are also commonly found in Brazil, Zambia, Canada, and Madagascar
- Emeralds are 20 times rarer than diamonds, due to the unnatural conditions needed for them to form

Lily of the Valley



Dear Mother, I am writing this not because of the project, but because of how much you mean to me. As you know, I am mediocre at best at expressing my feelings through words, but I can surely write them. I want you to know how much what you do means to me. From the big things to the small ones, our family would be doomed without you. I more than appreciate how you let me do my introvert chill after a long day, but I also know that you are always open to talking with me. No matter what type of day you've had, you are still willing to sit down and listen or rant about what has happened in my life. I love you more than you can imagine (the most), and I hope you have a wonderful Mother's Day. Ps. I apologize for my awful depiction of an emerald. Ps. handwriting.

Sincerely,
B.D.



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Student Reflections:

“I really liked doing this and my mom loved it too. She said, “Thank Mrs. Holter for having you guys do this project” and that it was her favorite card she’s gotten in a while”

“I made a card with my mother’s birthstone and my birthstone on the front; then on the inside I wrote facts about the birthstones and wrote a heartfelt message. For me it was a fun experience, and I am really happy that I got to write the message, so she knows how much I appreciate her. My mom loved it and said she’ll keep it forever.”



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Student Reflections

“This helped me to be better at writing cards, I have always been bad at it. I can be more thoughtful, and my mom can know that I am grateful for her.”

“I felt good to give my mom something nice. I will be nicer, give her more hugs, and do more work around the house.”

“It made me feel stressed to make sure it looked good and that I didn’t ruin the surprise but then I ended up ruining the surprise. I think my mom was positively impacted by the card. She said she liked it.”



Teacher Reflections:

I think students did not expect to make such an impact on their mom. I also think that using this FLEx as a conclusion to our Minerals and Tectonics unit helped students connect the dots to the complexities and formation of minerals to the creativity of God in so many ways.

The assignment that students received on the next two slides:

Mother's Day Blessing (FLEx)

In the unit of minerals, you learned about God's creativity and design in the study of minerals. We also learned about Birthstones because they are pretty- which is part of us being creation enjoyers.

In this assignment you will be researching you and your Mother's Birthstone. Then you will be making a Mother's Day card. Once it is finished, I will collect it, and in May, I will mail it home for your mom to enjoy. (I would like to surprise your mom, if possible, don't tell her about it) If you want to tell your dad/ stepdad/ other person to coordinate a gift you could do that.

I will provide the paper, extra colored pencils, scissors, ideas if needed, and some time in class to work on this.

Friday April 25th will be a workday in class.

Minimum Requirements:

- ☐ 1 Handmade card with your and your mom's birthstone artistically drawn in color on the front of the card and labeled. You can choose to draw a picture of the raw crystal instead of a cut one. (That is what I would do because I LOVE raw stones). A Bible Verse with the reference also goes on the front. Be sure to use your mom's favorite verse, your life verse, or BOTH.
- ☐ In the inside LEFT of the card, mineral information that includes the chemical formula, where the mineral is found naturally, how common it is, and any other interesting information. If you choose your life verse, explain WHY on the left side.
- ☐ In the inside RIGHT of the card, a note that you write to your mom for Mother's Day. This should be heartfelt and honest. Do your best to express your feelings in words. This should be about a paragraph in length as minimum. Why is your mom a blessing?
- ☐ Practice writing out your words before you put it into the actual card. This all should be handwritten in the best writing you can do.



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Checklist for website publication

As part of our ongoing curation of TfT stories, we invite you to prepare your TfT story for inclusion on our website! Please complete the checklist (right) and email your PowerPoint to your school designer. Please include your information below so we can reach out to you with questions, should they arise.

Name:

Email:

School:

Overall:

- ☐ Story is easily understood by someone not familiar with it.
- ☐ Permission for student names/photos to be shared throughout TfT network
- ☐ Spelling/grammar/sentence structure
- ☐ Links are active (and are linked to items that can be shared throughout TfT network)
- ☐ Photos & artifacts included and plentiful; photos and student reflections are used to tell the story

Slides include:

- ☐ Deep Hope
- ☐ Long Term Targets
- ☐ Curricular Outcomes
- ☐ Habits of Learning
- ☐ See God's Story
- ☐ Storyline
- ☐ Throughlines
- ☐ FLEx
 - ☐ Includes real work, real needs, real people
 - ☐ Involves "top 3 tier" real people
 - ☐ Tied to curricular outcomes
- ☐ Invite
- ☐ Nurture
- ☐ Empower
- ☐ Student Reflection
- ☐ Teacher Reflection