

WHAT'S INCLUDED?

created by Whitney Shaddock, the first grade roundup

10 STEM challenges

printables

lesson plans &
resource list

slides for each
STEM step

rubrics

NEXT GEN STEM

K-2 bundle

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LESSON PLANS & ANCHOR CHARTS

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Lesson-Plan-&-Resources

- Activate** Read the non-fiction book, *Pollination* (affiliate link: amzn.to/3dteGF5) or read the fiction book, *The Honeybee*, as an extension (amzn.to/3cwsH8Q). Then, watch this pollinator video www.youtube.com/watch?v=3bqwkcy0IM (~3 minutes)
- Problem** Open the STEM slides pdf. Read through the problem together.
Ask & Respond: What is the problem? Why is that a problem?
Ask & Think-Pair-Share: Is this problem fixable? How could we solve this problem?
Divide the kids into groups or partners. Here is how I group my kids by mixed abilities: bit.ly/3losABd
- Plan** Go to the Plan slide. There are 2 questions to answer. Kids should sit with their STEM partner or group. Ask them each question. *Do not have groups share out to the whole group here so that the teacher can monitor the work.* Have the group work on the question. You can stop here until the next day.
- Build** Go to the Build slide. You will be working on the question. Use the rubric that is included as you make the expectations clear and discuss how they will work. Allow STEM groups to work on the question. Collect their materials they will need. As the other groups work, you can stop here until the next day. Now it's time to build. If groups are not working, you can stop here until the next day. Review the questions whole group. These are the questions that you will answer each question and how they will answer.
- Share & Test** Each group will come to the front and answer each question and test it for the class. Using the star-star-wish chart, have the audience tell 2 things (stars) they like about their solution and one thing they wish they would do to improve it (wish).
- Publish & Reflect** After each group shares, allow the STEM groups to go back to their spot to complete the results page for their solution and reflect on how they did. You can also have them do this and the reflection independently if that works better for your kids.
- After they finish the results page, have kids independently fill out their group rubric or teamwork checklist to tell how they think they did. Remind them that they are grading how well they worked through the process, not how successful their solution was.

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I page of
plans and
resource
links included

INVENT me

An invention is something new that has a purpose

STEM
steps
chart

1

think

2

plan

3

build

4

share

5

publish

STAR * STAR * WISH

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I like how you

I like how you

I wish you would

3 share chart
templates in
color and BW

MATERIALS FOR EACH STEM STEP

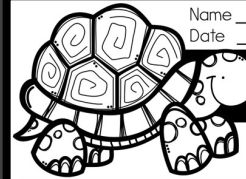
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What's the
PROBLEM?



Mike and Bella need to dig a hole in their backyard to plant new flowers. Their hands just aren't sharp enough to do that much digging. How could they mimic a bear's claws to help them dig the holes faster and better?

**Slides for problem, plan,
build, share & publish**



Name _____
Date _____

Results of
My Adaptation

Did my **adaptation** work? Why or why not?

**Printables for the
plan and results**

How could I improve my plan?

Picture of my adaptation and **label** its parts.

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2 plan slides with and without material pictures

ASSESSMENTS & WORD SEARCH

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Next Gen STEM Rubric: Constellations

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	1	2	3	4
Teamwork (x2 points) ☐ We cooperated as a team. ☐ We solved disagreements in a positive way.	We did not meet any of the goals.	We met both of the goals some of the time.	We met both of the goals almost all of the time.	We met both of the goals all of the time and... ☐ We encouraged each other to work together.
Plan ☐ We drew and labeled our constellation. ☐ We listed the stars in our constellation. ☐ We chose a constellation.				We finished all of the plan in a detailed and colorful way.
☐ We collected needed. ☐ We finished building our constellation. ☐ We wrote our constellation story.				We finished from.
Share & Reflect ☐ We shared our constellation story. ☐ We shared how we built our constellation. ☐ We told how we could improve our constellation.	We finished 1 or none of the goals.	We finished 2 of the goals.	We finished all of the goals.	We finished from.

Name: _____ Date: _____ Score: _____

Group & individual rubrics

Check Yourself: Teamwork

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	1	2	3
Teamwork (x2 points) ☐ I cooperated with my team members. ☐ I solved disagreements in a positive way.	I did not meet any of the goals.	I met both of the goals some of the time.	I met both of the goals almost all of the time.

Check Yourself: Teamwork

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	1	2	3
Teamwork (x2 points) ☐ I cooperated with my team members. ☐ I solved disagreements in a positive way.	I did not meet any of the goals.	I met both of the goals some of the time.	I met both of the goals almost all of the time.

Check Yourself: Teamwork

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	1	2	3	4
Teamwork (x2 points) ☐ I cooperated with my team members. ☐ I solved disagreements in a positive way.	I did not meet any of the goals.	I met both of the goals some of the time.	I met both of the goals almost all of the time.	I met both of the goals all of the time and... ☐ I encourage others work together with us.

self-check

Name: _____ Date: _____

SPACE word find

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word list

- sun
- crescent
- eclipse
- gibbous
- new moon
- season
- waxing
- waning
- star
- phase
- half moon
- Earth
- full moon
- orbit
- pattern

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

answer key included

WHAT OTHER TEACHERS ARE SAYING

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Used with Gifted and Talented! Love all the different options in the bundle! Thank you.

Thank you. These are a great supplement to our science curriculum.
~Whitney

I adapted this to use with 2nd-5th grade students at a summer camp at my school. I did it with two different groups of students. The students were so engaged and wanted to keep working on their projects and trying new ideas. I will definitely use this again in the future!

~Carolyn

FREQUENTLY ASKED QUESTIONS

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What standards are these challenges based on?

All of the Next Gen STEM challenges are based on the K-2 engineering and STEM standards in the Next Gen Science Standards.

How much time should I plan for these challenges?

Depending on your students and the challenge, these lessons can be as short as 45 minutes in one day or 2-3 45 sessions over a few days.

Is this resource editable?

While this resource is not editable, there are multiple versions of the anchor charts, assessments, and the plan slides to allow for flexibility to fit your needs.

ABOUT THE AUTHOR

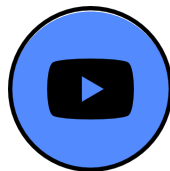
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Hey y'all! I'm Whitney Shaddock, the teacher author and blogger at the first grade roundup. I'm a National Board Certified teacher with my Masters Degree and have over 10 years of first grade experience in both high poverty and high wealth public schools. I've taught PreK Sunday School for over 17 years. I married my high school sweetheart in 2006. We were blessed with a beautiful boy in 2012 after years of infertility. In 2019, we adopted premie twins.

In 2011, I opened my TPT store. I love sharing real, practical resources I've tested and used in my own classroom. I am passionate about resources that align with the science of reading and full lesson plans and units to use in my classroom. Oh, and color coding is my love language! ☺

I love meeting new teachers, so let's connect!



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At-home learning with my child



My own purposes
e.g. decorate room, create new resource, plan lesson, track progress

Other

4

Account balance

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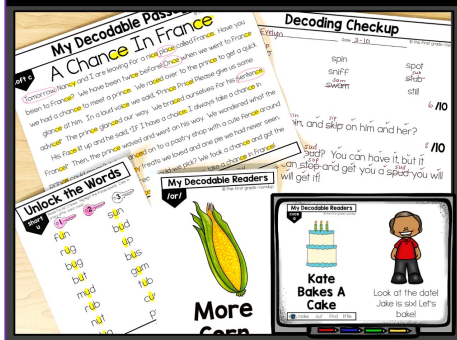
bit.ly/freephonics

OTHER BESTSELLERS YOU'LL LOVE

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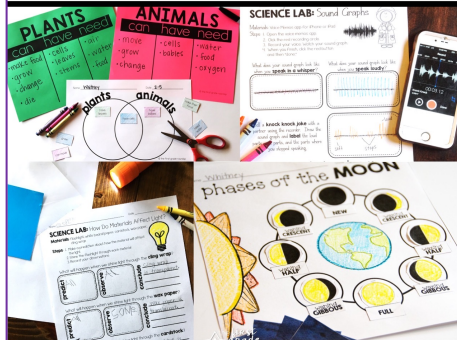
1ST GRADE DECODABLES

digital + printable texts
created by Whitney Shaddock, the first grade roundup



NEXT GEN SCIENCE BUNDLE

1st grade Units
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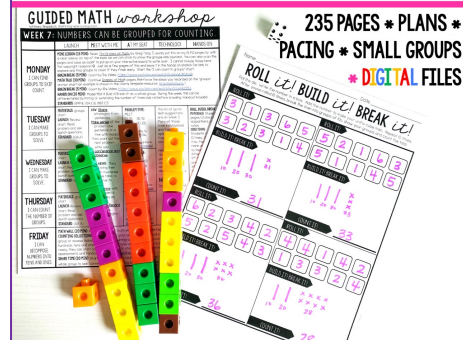
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GUIDED MATH WORKSHOP

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