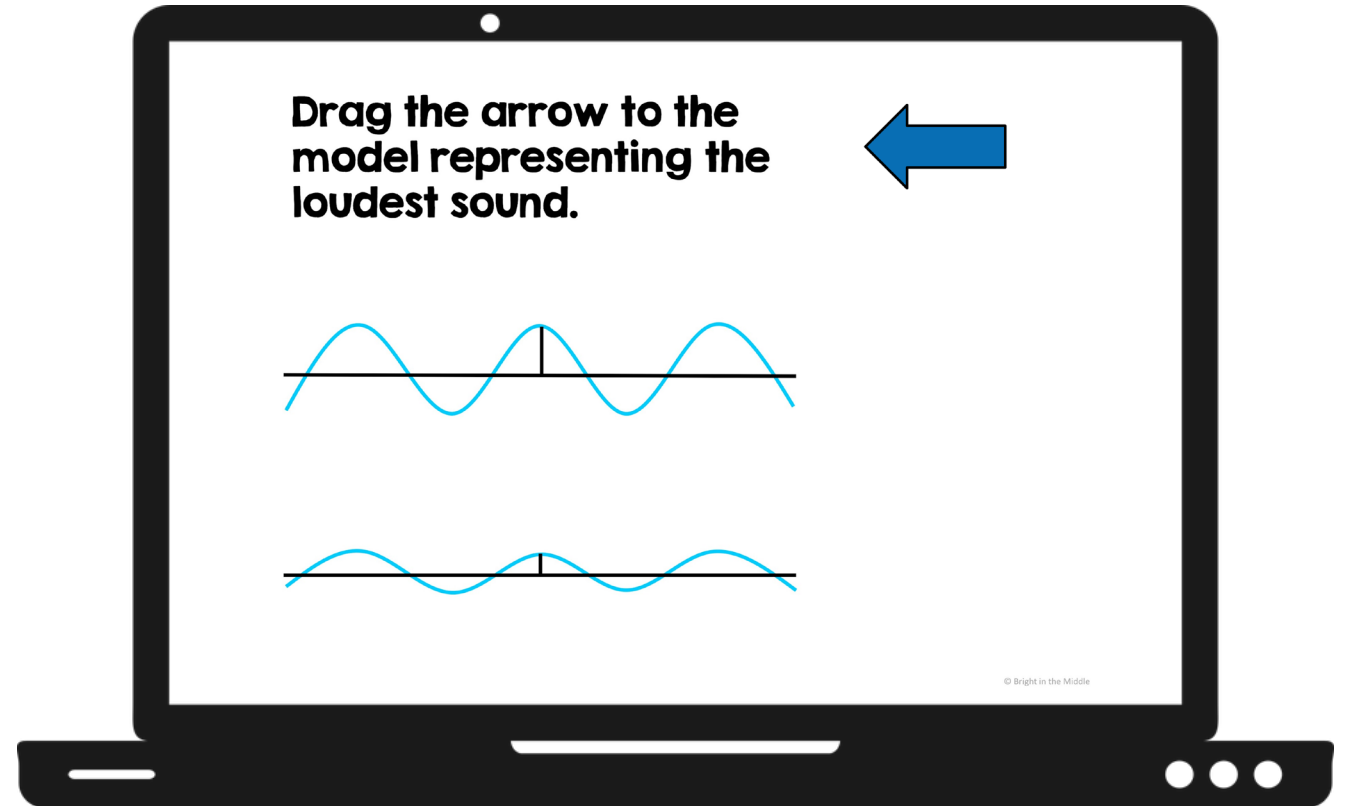


Sound Waves

Interactive Lesson

PRINT and DIGITAL



Compatible with Google Slides and PPT

Echo

reflection of sound waves causing repetition of the same sounds

- can hear in large open spaces
- We hear the reflection of sound waves.
- depend on temperature and distance

A key is also included!

is the correct answer.

The more compressed sound waves are, the smaller the amplitude.

True

False

Drag and Drop

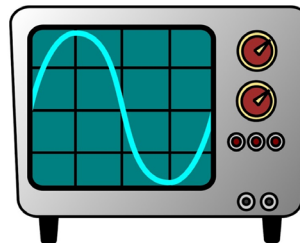
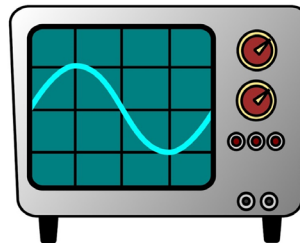
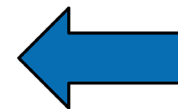
Drag each picture to the location you feel it best fits on this scale. (Sort them from lowest pitch to highest pitch.)



lowest pitch



Drag the arrow to the oscilloscope representing the loudest sound.



Type in the Text Box

In the text box below,
describe why there is no sound
in a vacuum.

Type here.

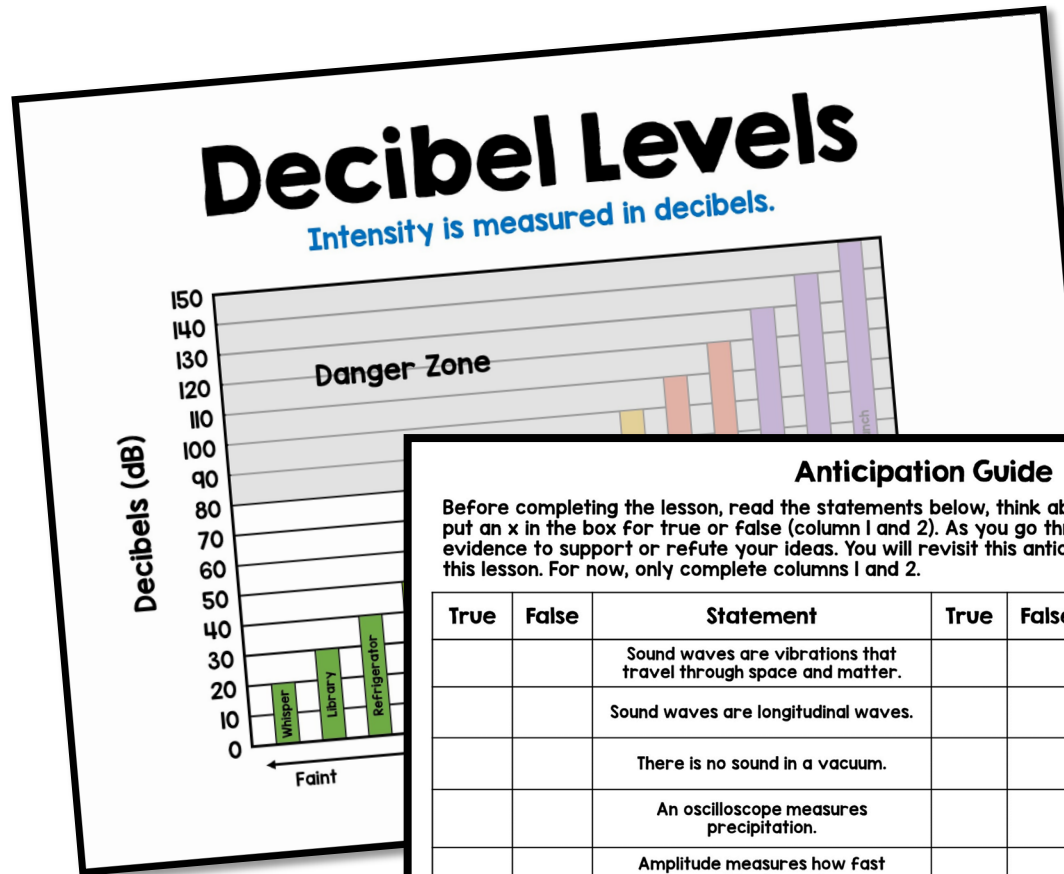
Click [here](#) to learn more about
sound waves.

Fill in the blank.

Sound waves need -----Type here.----- to disturb.



and more!

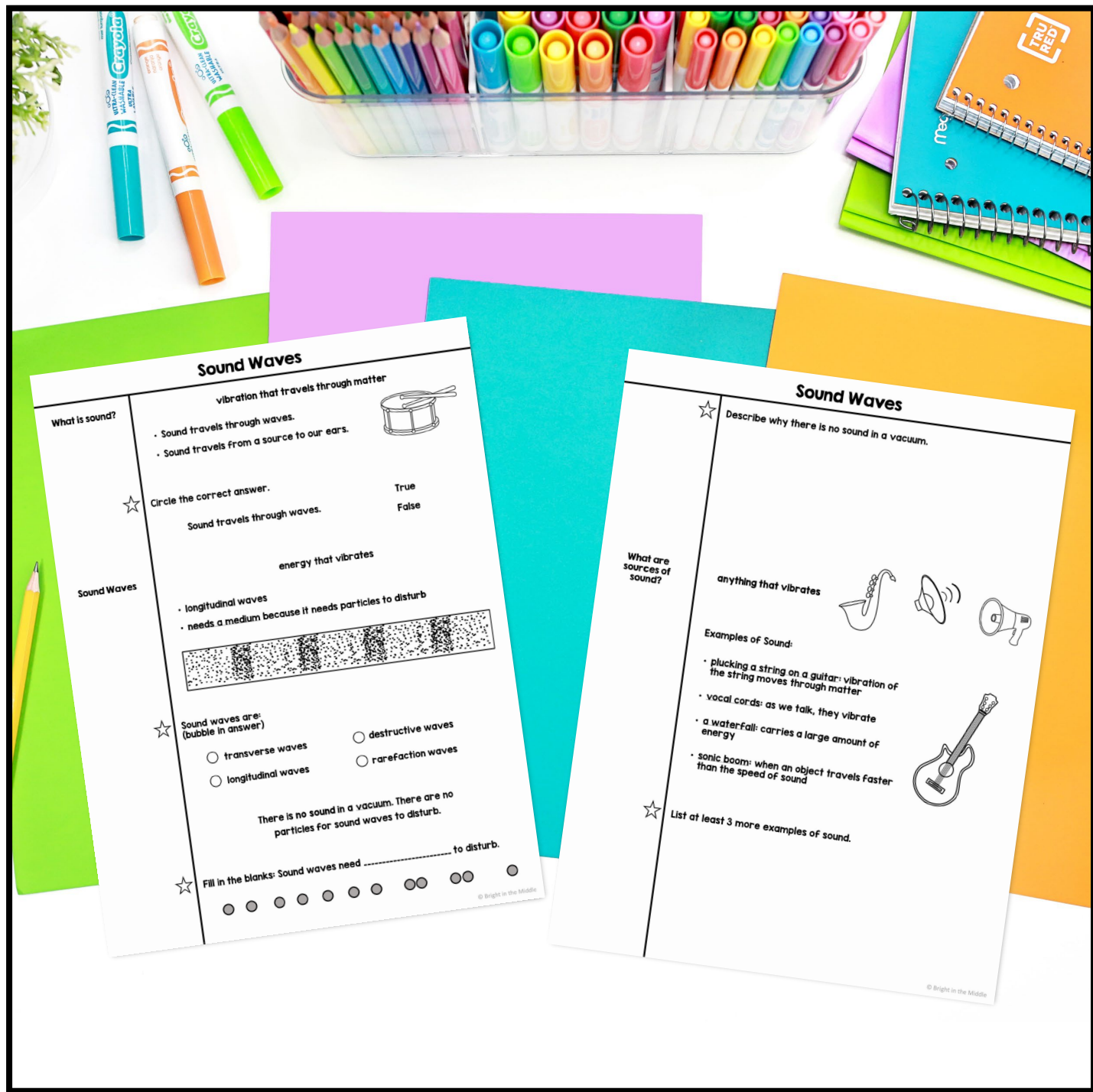


Anticipation Guide

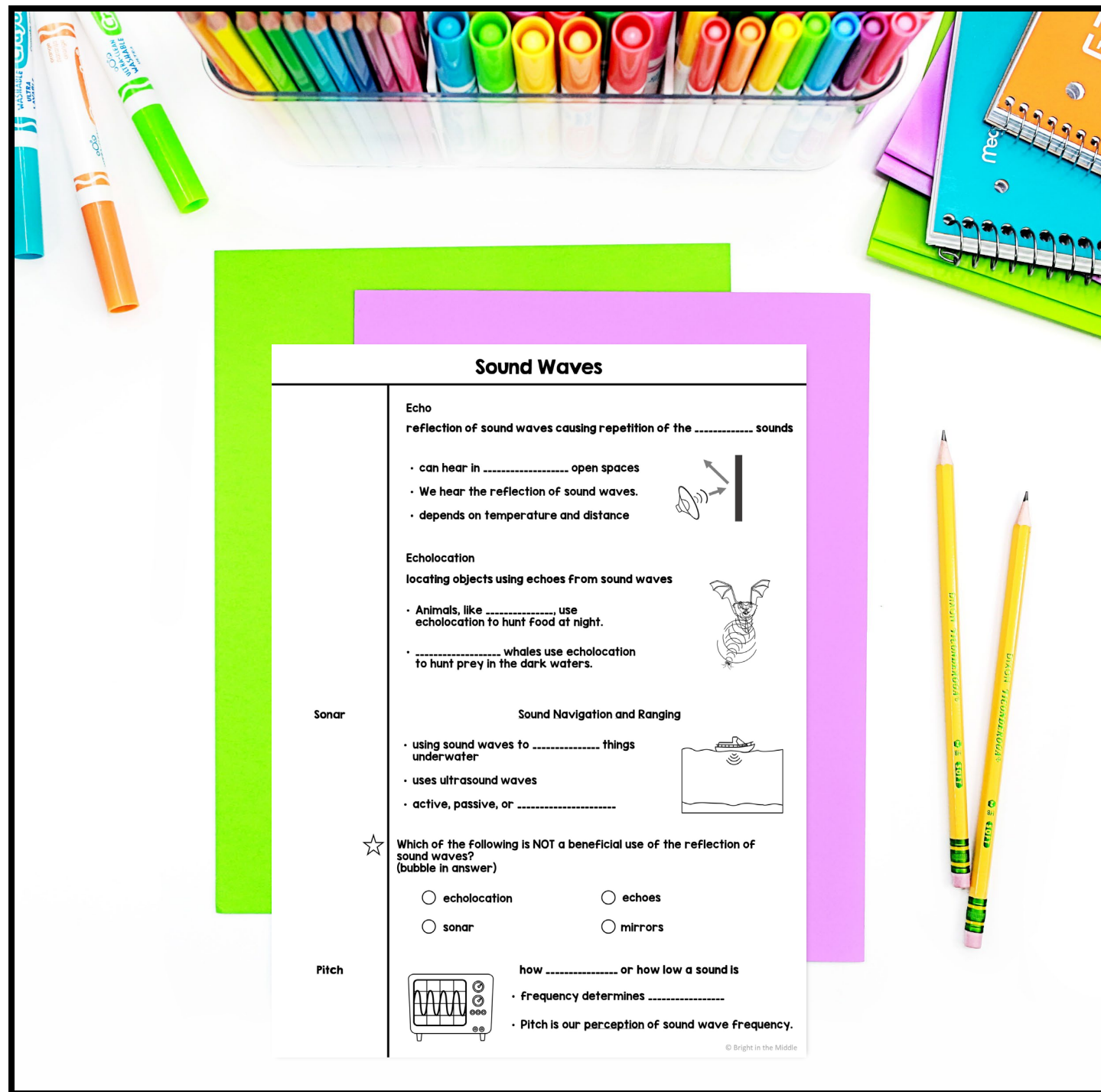
Before completing the lesson, read the statements below, think about your prior knowledge, and put an x in the box for true or false (column 1 and 2). As you go through the lesson, look for evidence to support or refute your ideas. You will revisit this anticipation guide after completing this lesson. For now, only complete columns 1 and 2.

True	False	Statement	True	False	Evidence
		Sound waves are vibrations that travel through space and matter.			
		Sound waves are longitudinal waves.			
		There is no sound in a vacuum.			
		An oscilloscope measures precipitation.			
		Amplitude measures how fast something is moving.			
		Loudness is how soft or loud a sound is to the listener.			
		As amplitude increases, loudness decreases.			
		Intensity is measured in hertz.			
		Echolocation uses the reflection of sound waves to locate objects.			
		The Doppler effect is used to find things underwater.			

A paper version is also included with interactive activities embedded.




**Guided
Cornell
notes are
included as
well!**



Sound Waves


Echo
reflection of sound waves causing repetition of the sounds

- can hear in open spaces
- We hear the reflection of sound waves.
- depends on temperature and distance



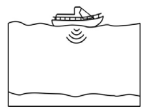
Echolocation
locating objects using echoes from sound waves

- Animals, like use echolocation to hunt Food at night.
- whales use echolocation to hunt prey in the dark waters.



Sonar **Sound Navigation and Ranging**

- using sound waves to things underwater
- uses ultrasound waves
- active, passive, or

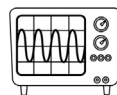


☆ Which of the following is NOT a beneficial use of the reflection of sound waves?
(bubble in answer)

echolocation echoes

sonar mirrors

Pitch



how or how low a sound is

- frequency determines
- Pitch is our perception of sound wave frequency.

© Bright in the Middle

Ways to Use Digital Interactive Lessons

Science digital interactive lessons are a great way to teach or review science content with your students for many reasons.

They are fun. They are engaging. Another reason, which I think is the most important, is that they help decrease the cognitive load. The way that digital interactive lessons are set up is first, a little bit of content, and then practice with that content, and repeat the process.

Students can digest small chunks of information a little at a time, apply that information, and then learn more! This will help keep their attention.

So, now, what are some ways that you can use them in your middle school science classroom?



Individual Learning

One way that interactive lessons can be used in the classroom is just for individual learning. These are digital lessons, so students can pull up the lesson on their computer, either via Google Classroom, Microsoft Teams, PowerPoint, or whatever you use in your classroom.



Students read through the lessons themselves and **work through the practice** at their own pace.

The benefits of doing this are that students can work at their own pace and you, as the teacher, can walk around the classroom as they are learning to answer any questions that they have. In addition, you can see what that particular student is learning. As you walk around the room and view their work, you can use it as a formative assessment to see if they are understanding the material.

You can also bump it up a notch. Since students will be working using the computer, you can embed related YouTube videos in the lesson for extra enrichment!

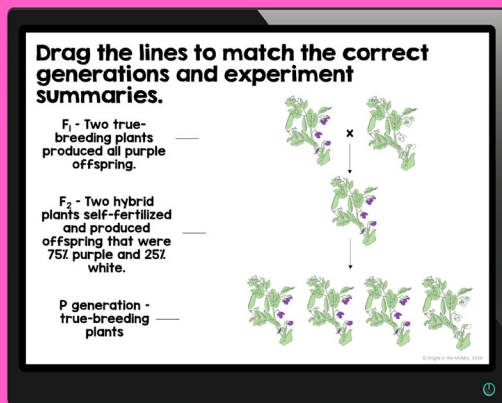
Digital Science
INTERACTIVE
Lessons
for

INDIVIDUAL LEARNING



Distance Learning

Digital interactive science lessons are a great tool to use for individual learning at a distance for the middle school science classroom.



**Digital Science
INTERACTIVE
Lessons**
for

DISTANCE LEARNING

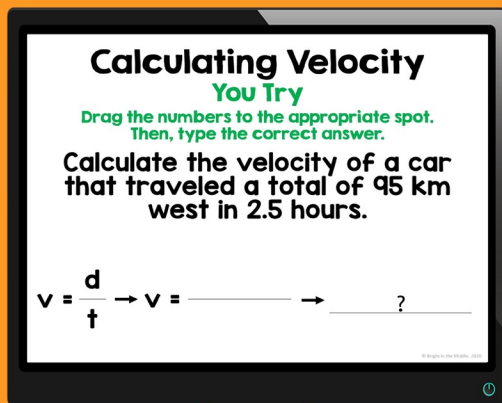
Students can read through the material, and after digesting chunks at a time, they can apply the information with embedded practice slides.

After completing the lessons, students can submit their work to their teacher.



Small Groups/ Partners

This works similarly to having students working as individuals except that students have the opportunity to work with one another. I think that this an awesome approach to differentiated learning in the classroom.



In small groups, or in partners, students are able to read the lesson together, discuss each practice slide, and apply the information together.

I prefer this method in many ways because I believe in the power of cooperative learning. As a teacher, you still have the opportunity to walk around and help the individual students as needed, but students also have each other for support.

Digital Science
INTERACTIVE
Lessons
for

**SMALL GROUPS/
PARTNERS**



Direct Instruction

As mentioned, digital interactive lessons are set up as a lesson with embedded practice to help decrease the cognitive load. If teachers choose to, they can pull up the lesson and teach it to their students and still take pieces of content and digest them bit by bit.



For example, when teaching about **pedigree charts**, the teacher can first discuss what a square and a circle represent in a pedigree chart.

Digital Science
INTERACTIVE
Lessons
for

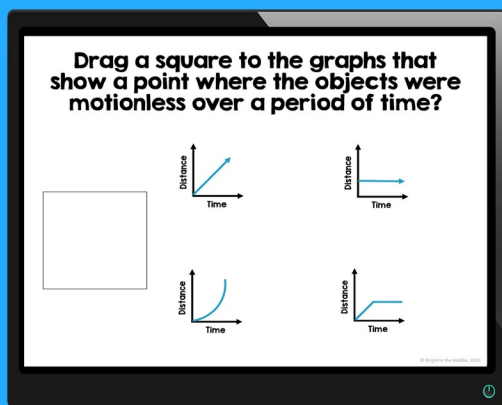
DIRECT INSTRUCTION

After students digest this material, the teacher can ask students to discuss how they will remember this information and then apply the information in practice.



Science Centers

Digital interactive science lessons can be used in one of two ways for science centers. First, science centers on a particular topic. For example, say you are teaching distance-time graphs, and you are ready for students to complete science centers on this topic. You can have a center for a [digital interactive lesson](#) (make groups in Google Classroom, or another platform), [task cards](#), [story match](#), and a reading passage.



Digital Science
INTERACTIVE
Lessons
for

SCIENCE CENTERS

Another way that you can use interactive science lessons for science centers is only using digital interactive lessons. Time to review for a [genetics](#) test? You can have stations set up where students will move around the room.

They can work through individual lessons such as Gregor Mendel and an Introduction to Genetics, Asexual and Sexual Reproduction, Mitosis and the Cell Cycle, Meiosis, Punnett Squares, Pedigree Charts, and Variation of Traits and Genetics Disorders. This route may take more than one day. It just depends on how long your classes are and how much time you can devote to review. I personally like the first approach to using digital interactive lessons as a science center.



For ELL Students

With technology, there are so many awesome opportunities for students that do not speak English as their primary language to learn science content in schools that speak predominantly English. That goes vice versa as well. If you are trying to learn in any language you are unfamiliar with, technology is here to help!



There are many options that students can use to learn science material. As a teacher that only speaks English, you can imagine how difficult it is to teach a student that speaks another language. I'm sure there are other teachers out there with the same dilemma.

Digital Science
INTERACTIVE
Lessons
for

ELL STUDENTS

With technology, I have been able to give my students the science lesson and have them use Google translate in order to understand what the lesson is saying. Now, I'm working on creating digital science lessons in Spanish, so that one step is taken out.



Enrichment/ Tutoring

I know that many schools set up a time during the day just for enrichment/tutoring.



Many schools only set up this time for reading/math, but some do science too! Especially those that test in science. Interactive lessons are a great way to review standards-based science material and practice!

Digital Science
INTERACTIVE
Lessons
for

**ENRICHMENT/
TUTORING**

