

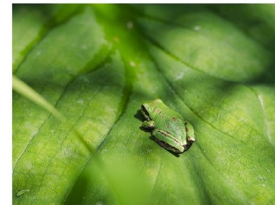
Adaptations and Natural Selection

Interactive Lesson

PRINT and DIGITAL

In the text box below, describe what you notice about the organisms in the photos below.

Type here.



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Compatible with Google Slides and PPT

Organisms of the same species
have a variation of traits.

There are many similarities, but
you will also notice **differences**.



A key is also
included!

Drag the circle to the correct response.

Which of the following is a
trait that helps an organism
survive and reproduce?

- evolution
- natural selection
- adaptation
- parasite



Drag and Drop

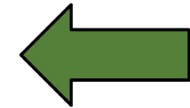
Drag the circle to the correct response.

What is variation?



- process by which organisms change over time in response to the environment
- ability of an organism
- differences that can occur within the same species
- when new species are created

Drag an arrow to all examples of learned traits.



having red feathers

speaking French

a dog sitting on command

nose shape

riding a bike

Type in the Text Box

Click [here](#) to learn more about camouflage and mimicry.

In the text box below, describe the most interesting thing you learned about these anatomical adaptations.

Type here.

In the text box below, describe one adaptation that the organism below has for its environment.

Type here.



and more!

In the text boxes below, in the 1st Column, type in what you already KNOW about adaptations and natural selection. In the 2nd column, type in what you WANT to learn about adaptations and natural selection. The last column will be completed at the end of the lesson (what you've learned).

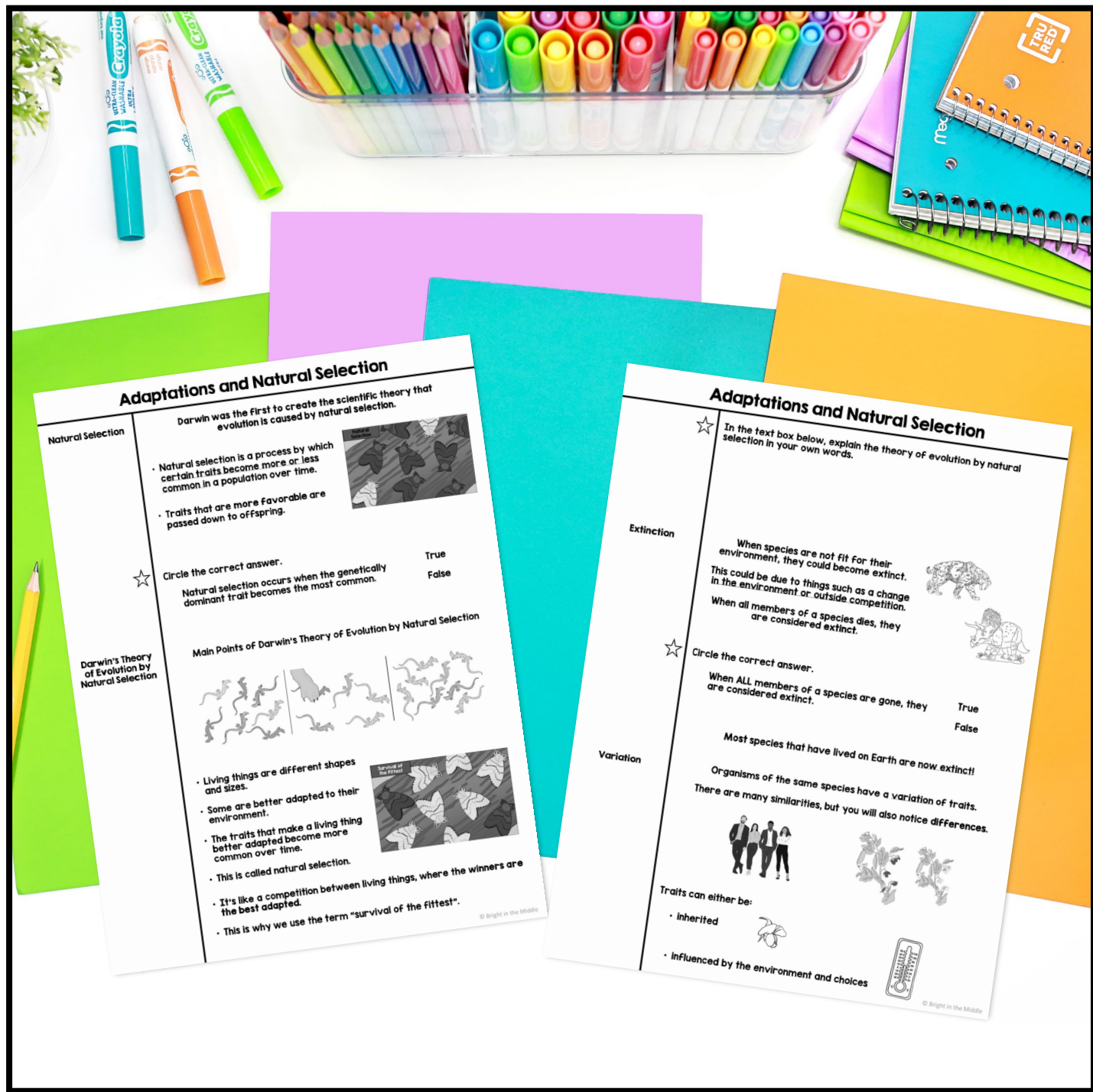
Last Slide

K	W	L
• Type here.	• Type here.	

Drag the arrows to match the term with its definition.

- natural selection → process by which different species of organisms develop and change over time
- evolution → trait from choices and the environment
- variation → process by which certain traits become more or less common in a population over time
- inherited trait → measure of an organism's ability to survive and reproduce
- acquired trait → differences that can exist between individuals of the same species
- biological fitness → trait received genetically

A paper version is also included with interactive activities embedded.



Adaptations and Natural Selection

Natural Selection

Darwin was the first to create the scientific theory that evolution is caused by natural selection.

- Natural selection is a process by which certain traits become more or less common in a population over time.
- Traits that are more favorable are passed down to offspring.



Circle the correct answer.

Natural selection occurs when the genetically dominant trait becomes the most common.

True
False

Darwin's Theory of Evolution by Natural Selection

Main Points of Darwin's Theory of Evolution by Natural Selection



- Living things are different shapes and sizes.
- Some are better adapted to their environment.
- The traits that make a living thing better adapted become more common over time.
- This is called natural selection.
- It's like a competition between living things, where the winners are the best adapted.
- This is why we use the term "survival of the fittest".



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Adaptations and Natural Selection



In the text box below, explain the theory of evolution by natural selection in your own words.

Extinction

When species are not fit for their environment, they could become extinct. This could be due to things such as a change in the environment or outside competition. When all members of a species dies, they are considered extinct.



Circle the correct answer.

When ALL members of a species are gone, they are considered extinct.

True
False

Variation

Most species that have lived on Earth are now extinct! Organisms of the same species have a variation of traits. There are many similarities, but you will also notice differences.



Traits can either be:

- inherited

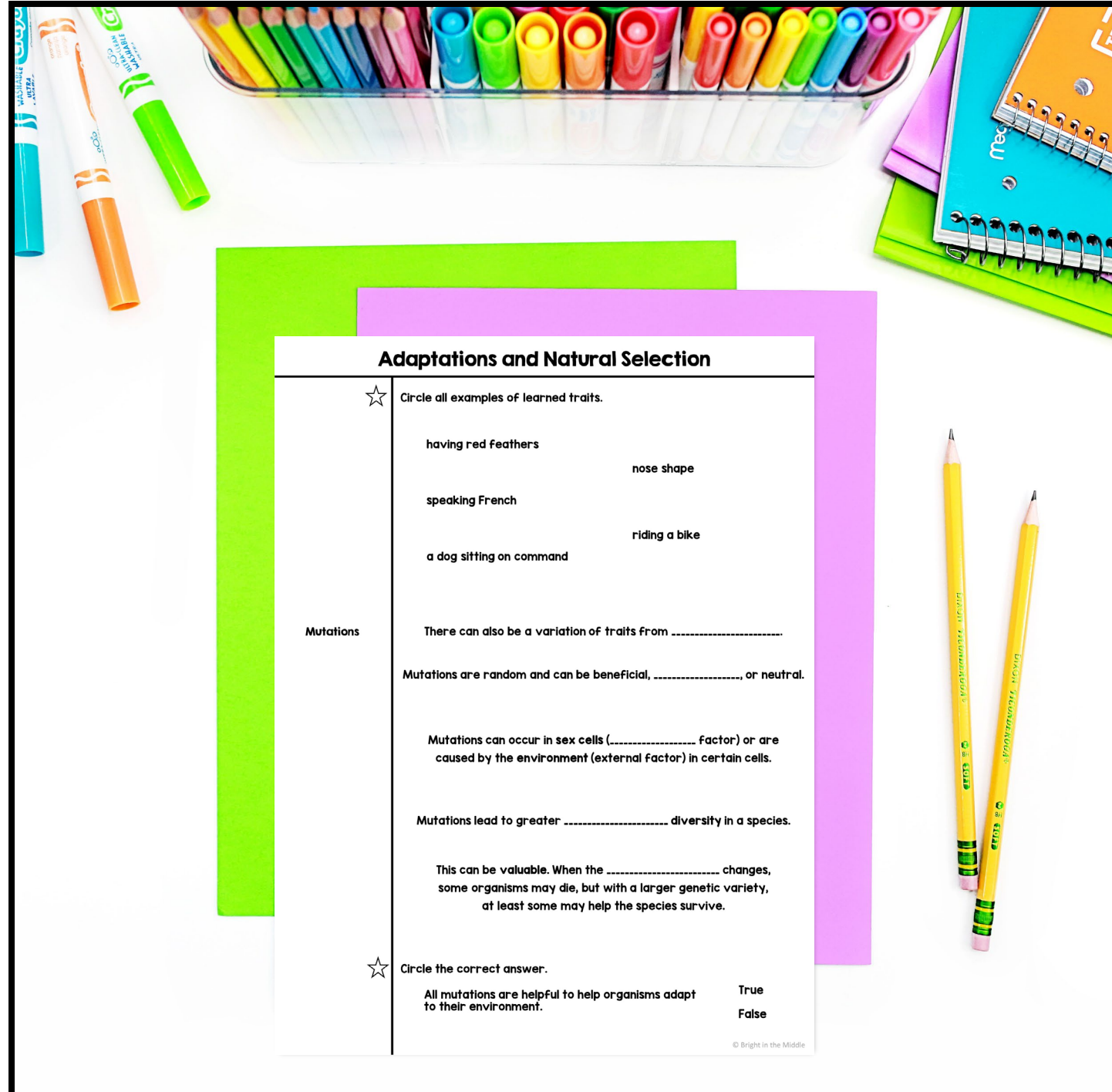


- Influenced by the environment and choices



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



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!

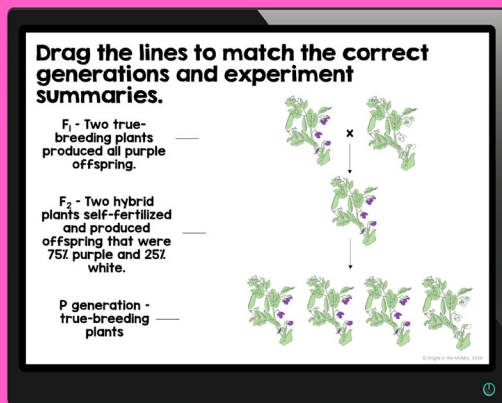
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INTERACTIVE
Lessons
for**

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.



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.

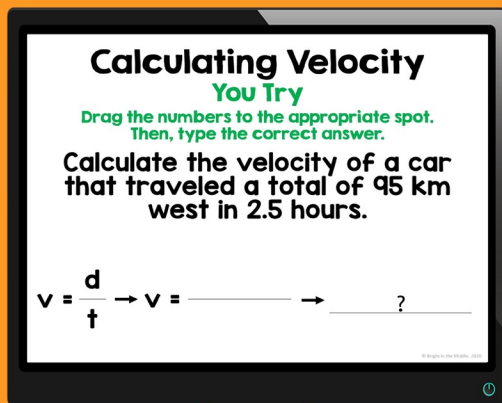
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DISTANCE LEARNING



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.

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**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.

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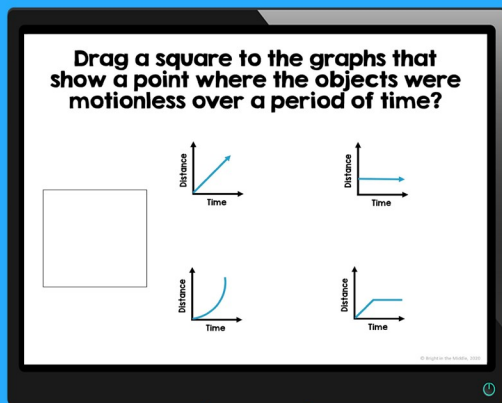
DIRECT INSTRUCTION

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.



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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!



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ELL STUDENTS

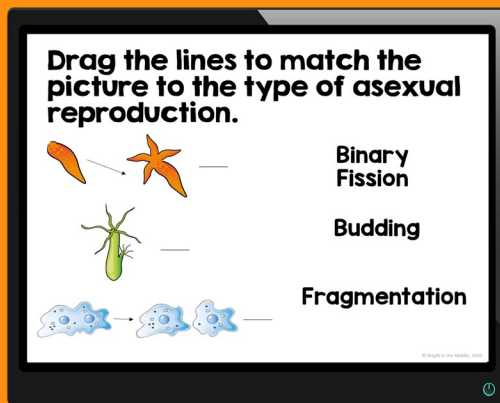
There are many options that students can use to learn science material. As a teacher that only speaks English, you can imagine how difficult it is to teach a student that speaks another language. I'm sure there are other teachers out there with the same dilemma.

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!

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for

**ENRICHMENT/
TUTORING**

