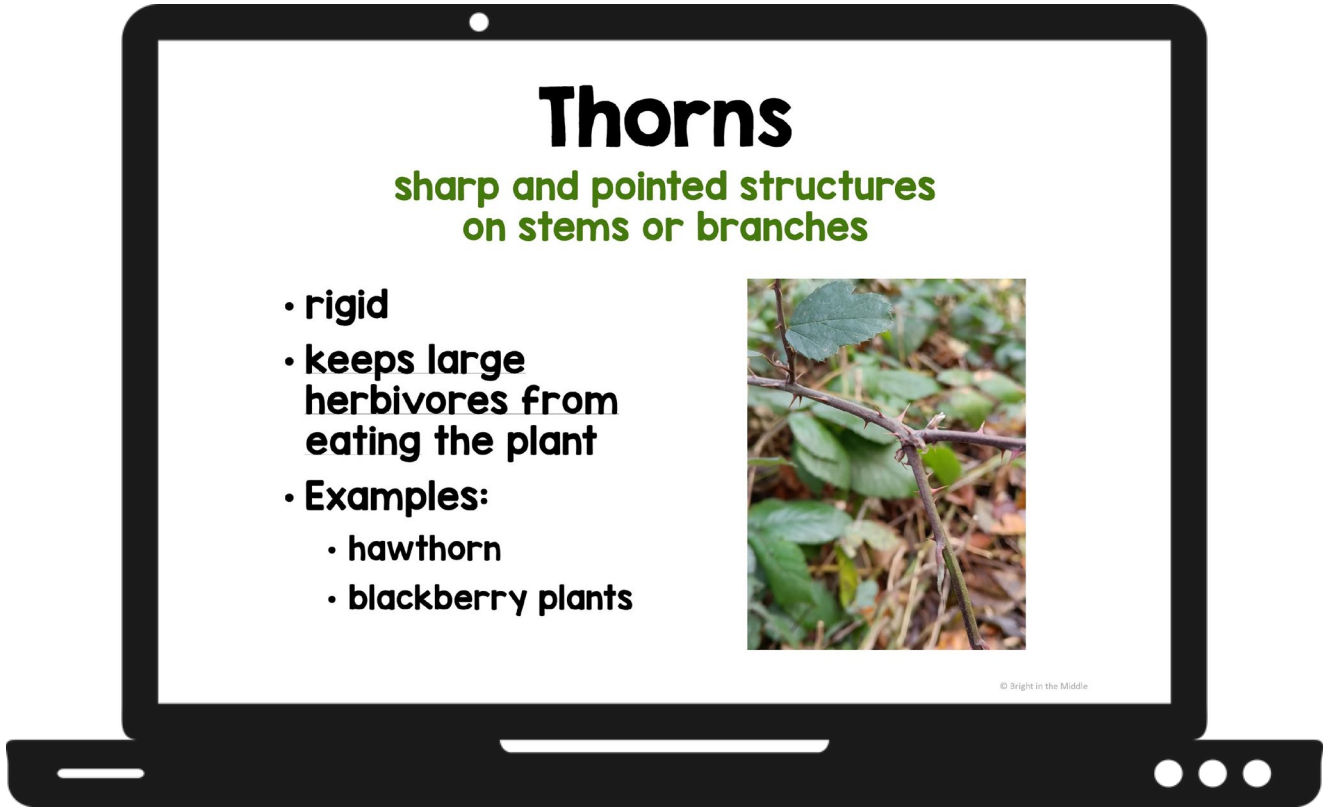
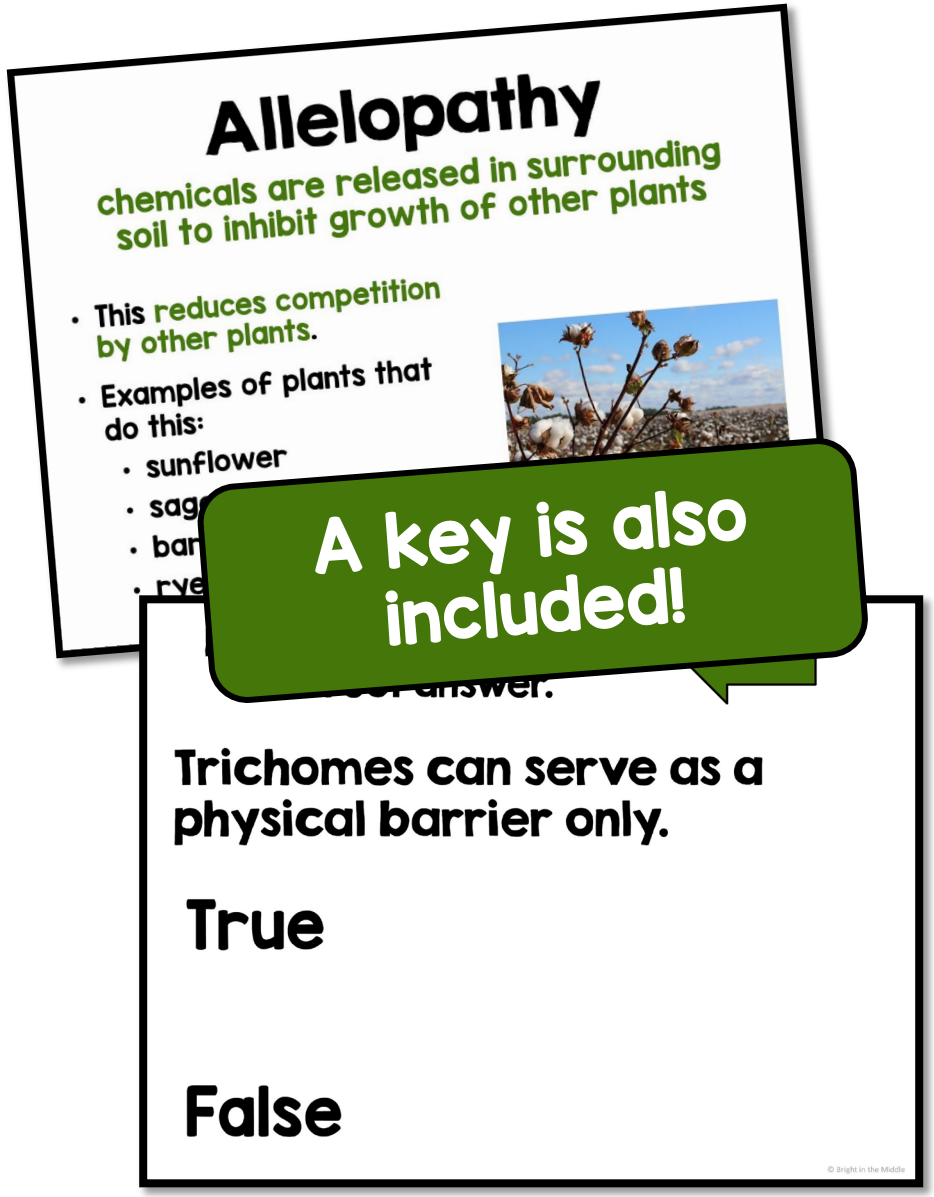
Plant Defense Mechanisms

Interactive Lesson

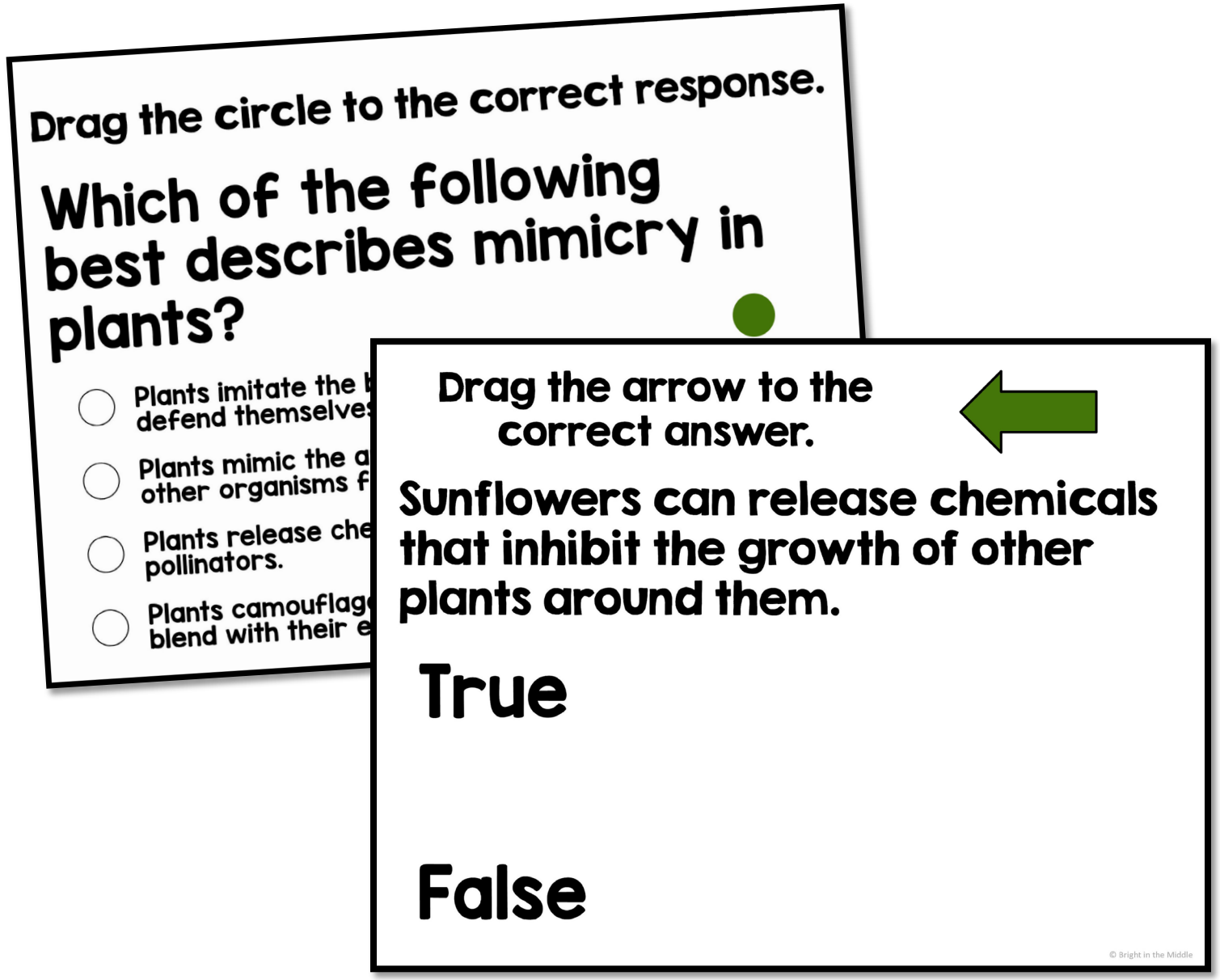
PRINT and DIGITAL



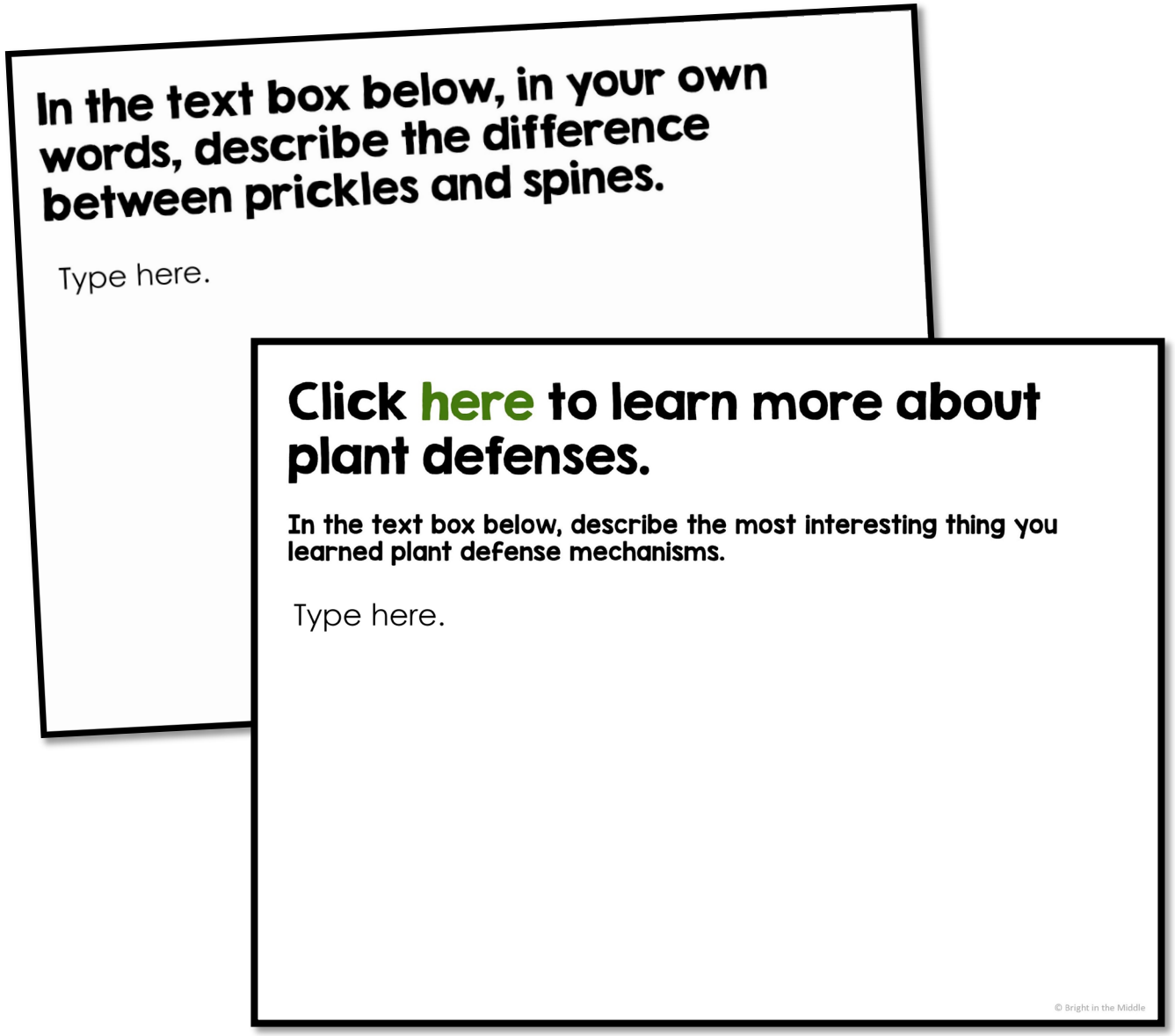
Compatible with Google Slides and PPT



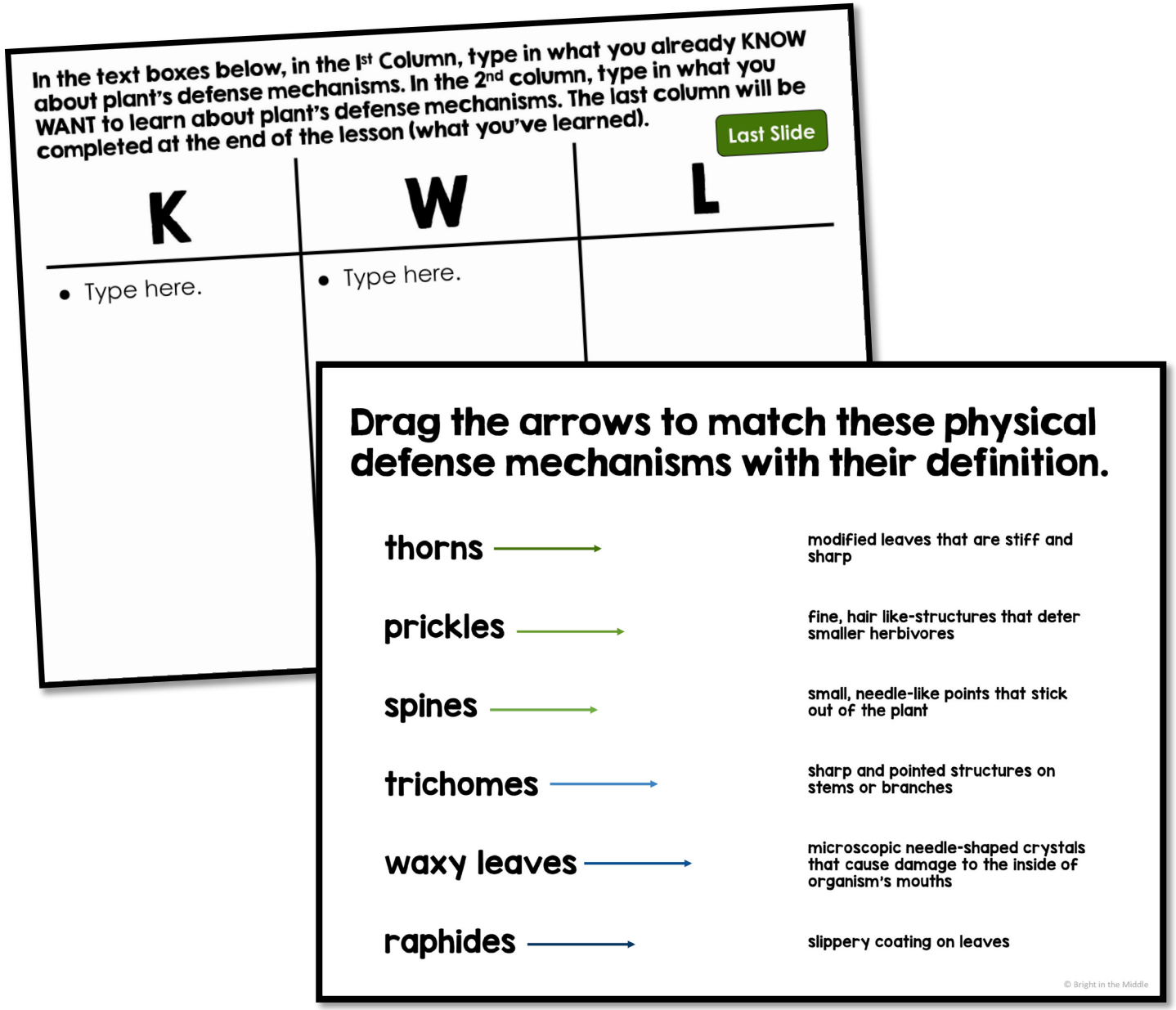
Drag and Drop



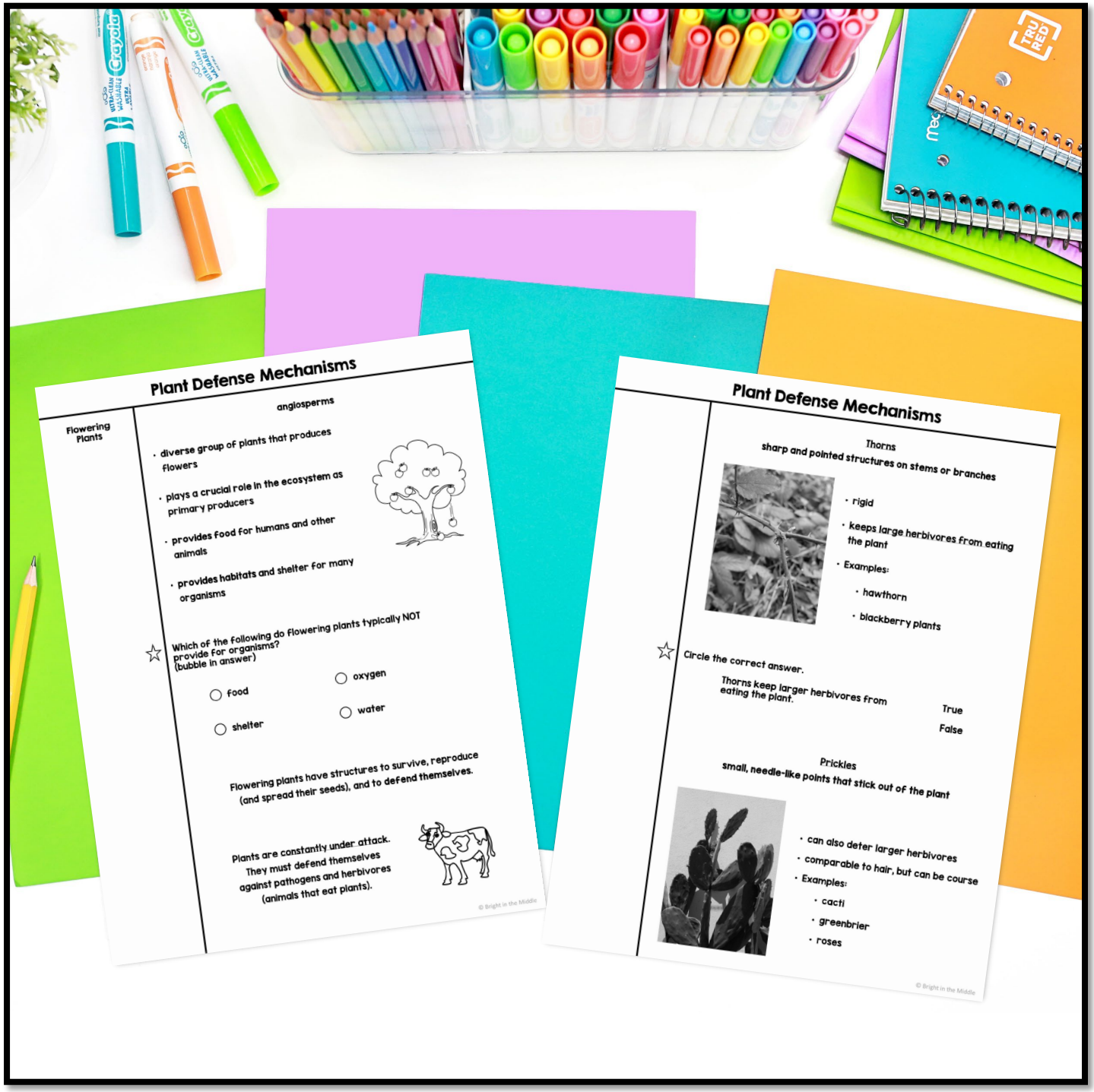
Type in the Text Box



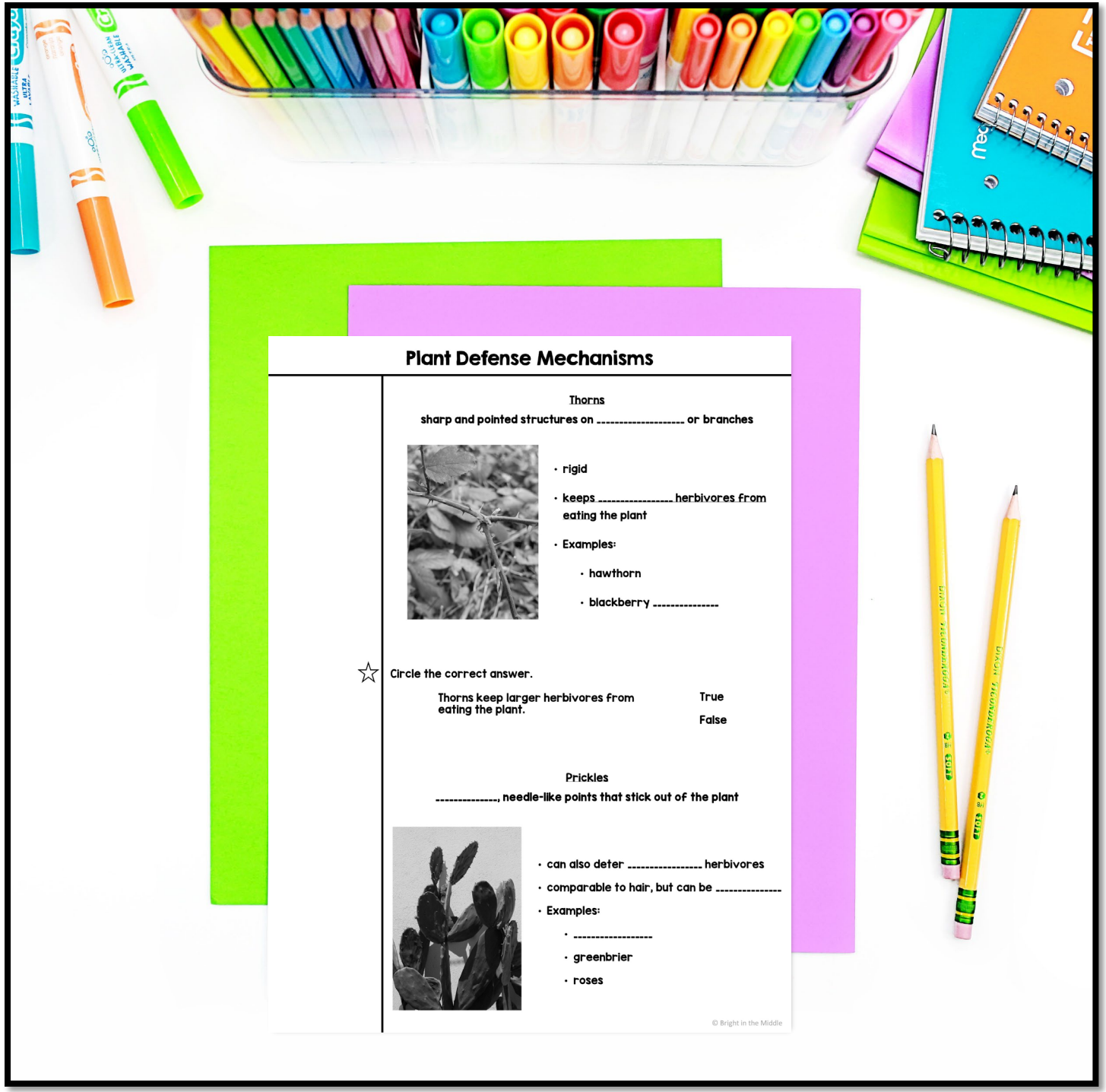
and more!


In the text boxes below, in the 1st Column, type in what you already KNOW about plant's defense mechanisms. In the 2nd column, type in what you WANT to learn about plant's defense mechanisms. 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 these physical defense mechanisms with their definition.
thorns
prickles
spines
trichomes
waxy leaves
raphides
modified leaves that are stiff and sharp
fine, hair like-structures that deter smaller herbivores
small, needle-like points that stick out of the plant
sharp and pointed structures on stems or branches
microscopic needle-shaped crystals that cause damage to the inside of organism's mouths
slippery coating on leaves
© Bright in the Middle

A paper version is also included with interactive activities embedded.



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?

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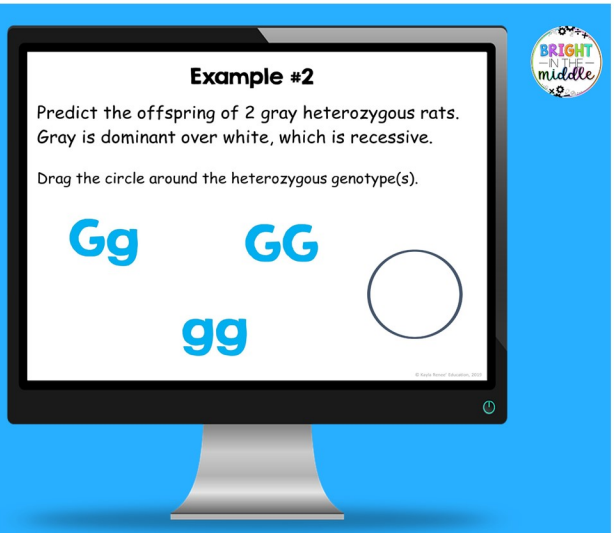
Individual Learning

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.



Digital Science INTERACTIVE Lessons for INDIVIDUAL LEARNING

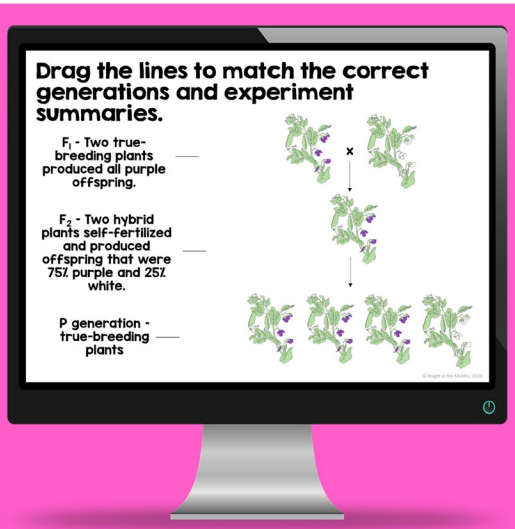
Students read through the lessons themselves and work through the practice at their own pace.

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!

Distance Learning

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



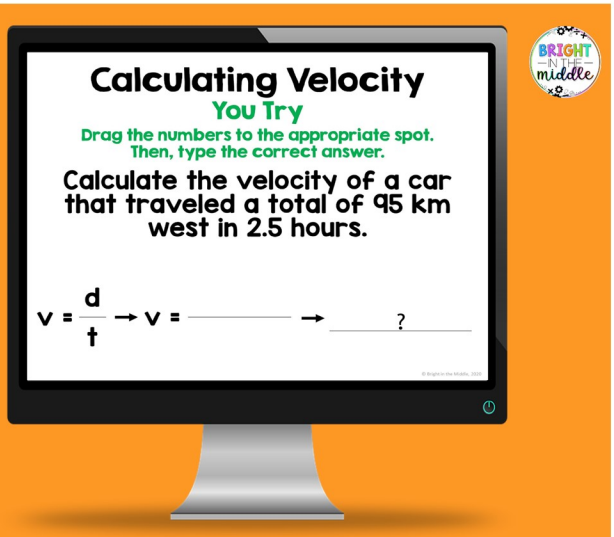
Digital Science INTERACTIVE Lessons for DISTANCE LEARNING

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.



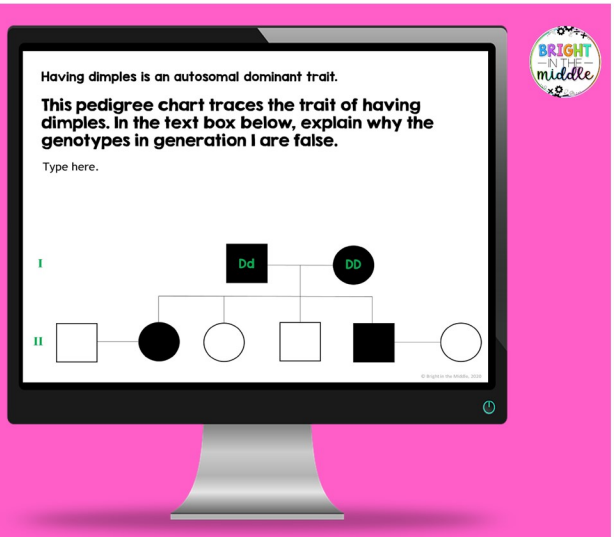
Digital Science INTERACTIVE Lessons for SMALL GROUPS/ PARTNERS

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.

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.



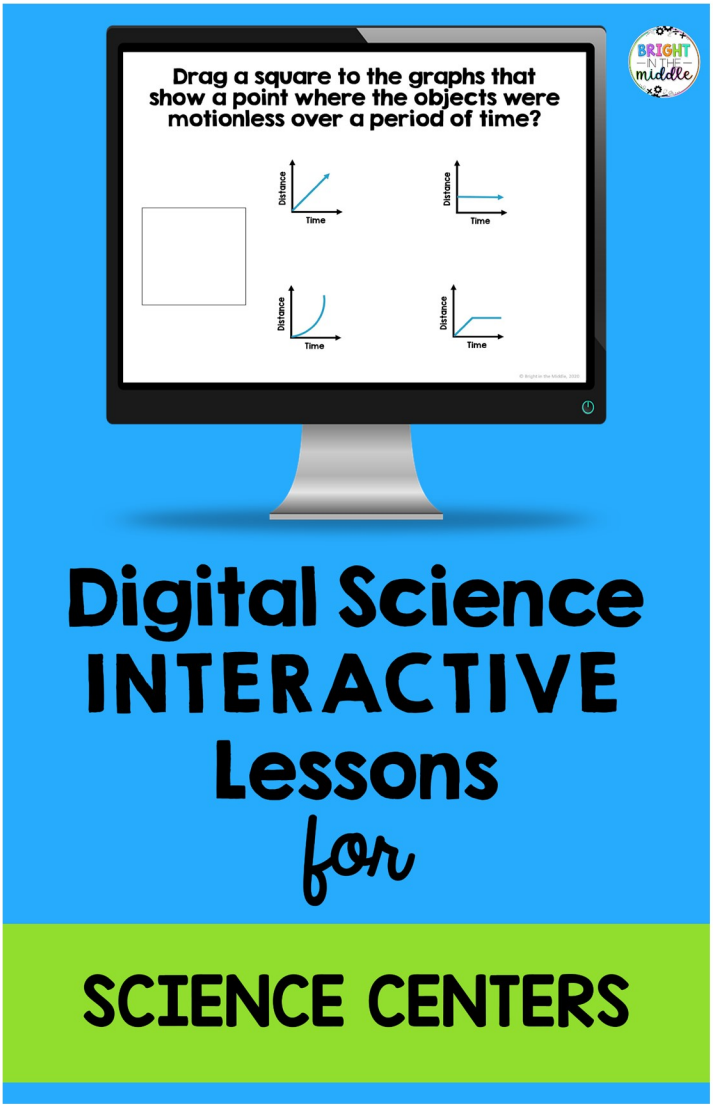
Digital Science INTERACTIVE Lessons for DIRECT INSTRUCTION

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

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.



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!

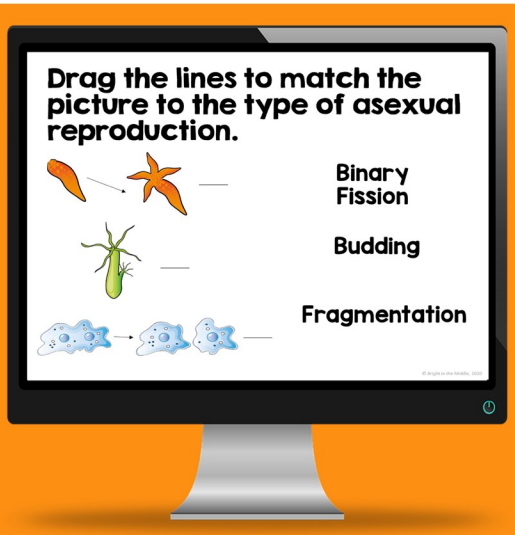
Digital Science INTERACTIVE Lessons for ELL STUDENTS

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.



Digital Science INTERACTIVE Lessons 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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