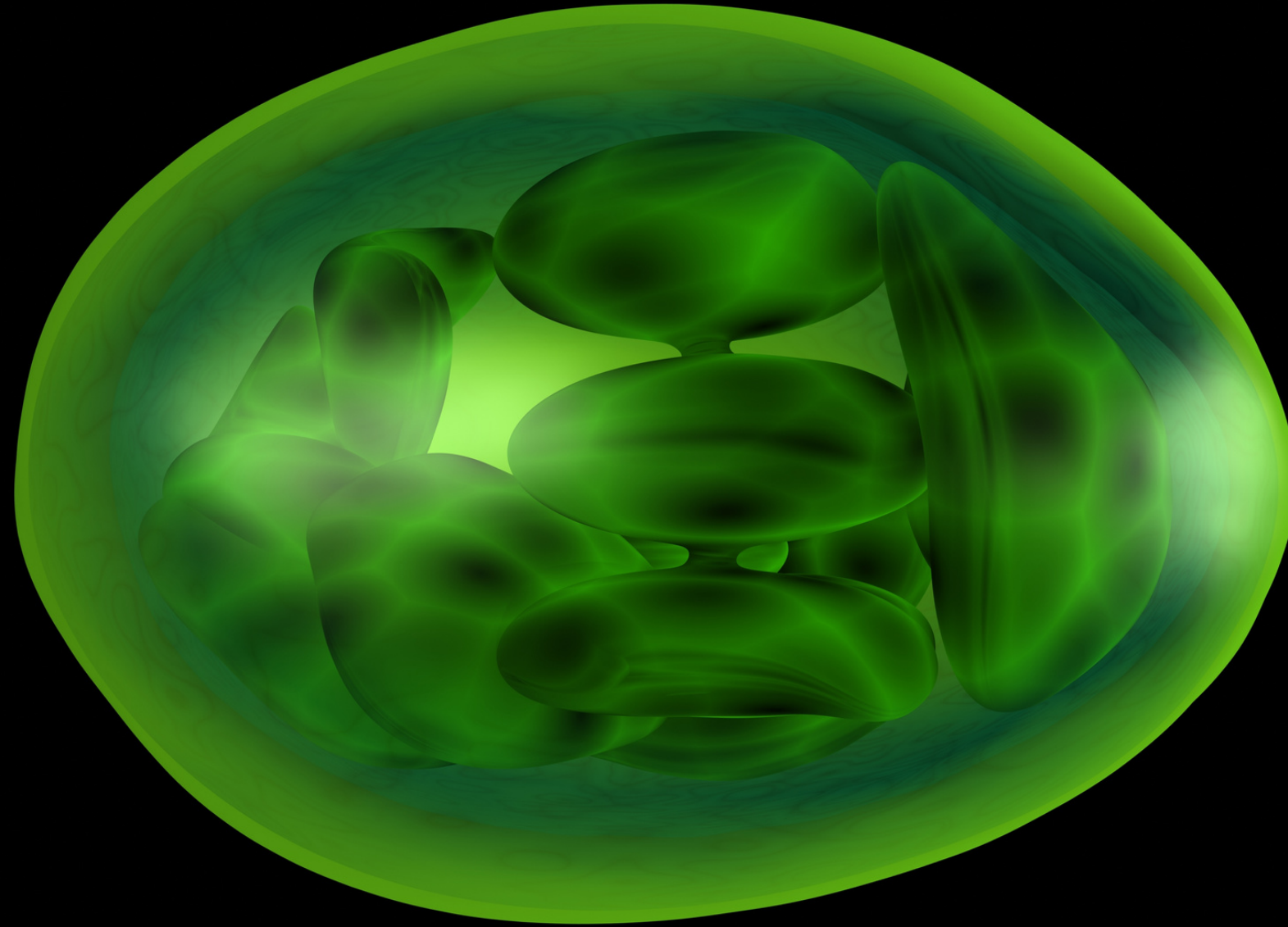


Special Ed

CHLOROPLAST



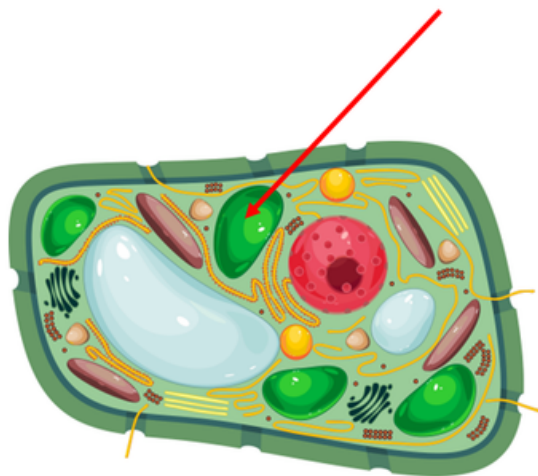
ALSO INCLUDES GOOGLE SLIDES



This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, has a very short attention span, and struggles to sit still. With some support he is able to do this unit, and enjoys the challenge. He is my tester!!

Organelles: Chloroplasts

By
Christa Joy
Special Needs for Special Kids



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| 27-32 | Match functions to parts of chloroplast |
| 33-35 | Labeling parts of chloroplast |
| 36-39 | Ins and outs of photosynthesis (easy) |
| 40-43 | Labels steps of photosynthesis in |
| 44-48 | Cloze worksheets |
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Also included in this resource as separate files:

- Lesson plans
- Links and directions to digital activities
- PowerPoint (this is the book in the lesson plan)
- Voice recorded PowerPoint
- Activities in black and white

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This unit contains 9 days of material in print and digital formats. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

It comes in 2 separate files. One in color and one in black and white.

Chloroplasts Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
 - Laminate or place in page protector
- Book
 - Print out, laminate, and bind
 - OR your students can listen to the pre-recorded version
- Vocabulary cards
 - Print out a set of cards onto cardstock and laminate
 - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

Teaching Tips

- **Color Coding:** this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
 - For more info, read more here: <https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/>
 - I also have a blog post on differentiating c <https://specialneedsforspecialkids.org/2018/3-ways-easily-and-effectively/>
- **Make your own copies of the activities:** Every day yesterday. For that reason:
 - I often complete the activity myself and do that I could use year after year.
 - My copies were also helpful as either a more support or as a way for more advanced work.

Quick Look

| Day | Activity |
|-----|---|
| 1 | <ul style="list-style-type: none"> • Book • Vocab cards introduction • Circle map |
| 2 | <ul style="list-style-type: none"> • Book • Vocab cards activity • Circle map |
| 3 | <ul style="list-style-type: none"> • Book • Vocab cards activity • Labeling activities |
| 4 | <ul style="list-style-type: none"> • Book • Vocab cards activity • Matching activities |
| 5 | <ul style="list-style-type: none"> • Book • Vocab cards activity • Sequencing activities |
| 6 | <ul style="list-style-type: none"> • Book • Vocab cards activity • Sequencing activities |
| 7 | <ul style="list-style-type: none"> • Book |

Day 6

| Activity | Notes | Materials |
|--|--|---|
| Read or listen to a recording of the book (10 minutes) | <ul style="list-style-type: none"> • Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board | <ul style="list-style-type: none"> • Book • Vocabulary board |
| Vocabulary cards Bean Bag Toss (10 minutes) | <ul style="list-style-type: none"> • Glue the cut apart symbols to the paper plates (one on each plate) • Arrange them around the room • Students toss the bean bag trying to get it to land on a paper plate <ul style="list-style-type: none"> ◦ Students retrieve the paper plate and share the vocabulary card they retrieved | <ul style="list-style-type: none"> • Vocabulary cards • Vocabulary cards cut apart • Small paper plates (you can also use pieces of construction paper) • Bean bags |
| Sequencing activity review (5 minutes) | <ul style="list-style-type: none"> • Review the sequencing worksheet completed yesterday | <ul style="list-style-type: none"> • Completed worksheet |
| Sequencing activity (10 minutes) | <ul style="list-style-type: none"> • Do the sequencing activity on photosynthesis in the chloroplast <ul style="list-style-type: none"> ◦ Add color-coding for students who need more support. ◦ There is a color-coded version in the color activities. • Make connections to the book as necessary | <ul style="list-style-type: none"> • Sequencing worksheets • Scissors • Glue |
| Sharing (10 minutes) | <ul style="list-style-type: none"> • Each student shares their finished worksheet with the group using the communication method of their choice | <ul style="list-style-type: none"> • Completed worksheet • Communication devices |

There is a 9 day lesson plan with tips and detailed plans for each day with individual and group activities.

This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

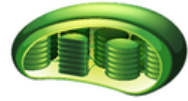
Tips on how to use in the unit!!



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chloroplasts

Organelle that turns food into energy the cell can use. Powerhouse of the cell.



organelle

Things inside the cell that have their own membrane and special job to do.



chloroplasts

Organelle that turns food into energy the cell can use. Powerhouse of the cell.



organelle

Things inside the cell that have their own membrane and special job to do.



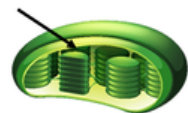
outer membrane

Smooth outer surface of chloroplast that protects it.



inner membrane

Membrane inside the chloroplast that has holes and allows things in and out of the chloroplast.



outer membrane

Smooth outer surface of chloroplast that protects it.

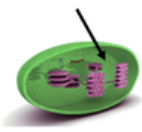


inner membrane

Membrane inside the chloroplast that has holes and allows things in and out of the chloroplast.



stroma



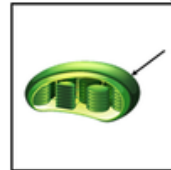
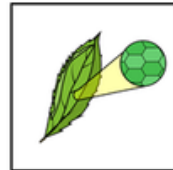
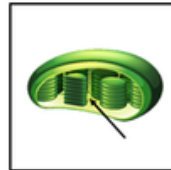
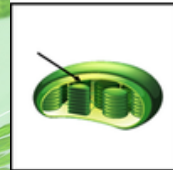
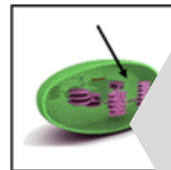
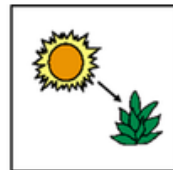
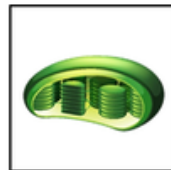
thylakoids



chlorophyll



grana



Things inside the cell that have their own membrane and special job to do.

Stacks of thylakoids inside the chloroplast.

Sacks inside chloroplast that contain pigments (chlorophyll) responsible for making food for the cell.

Energy that is stored in the chlorophyll gotten from sunlight and used in photosynthesis.

Holds grana in place to maximize the surface area.

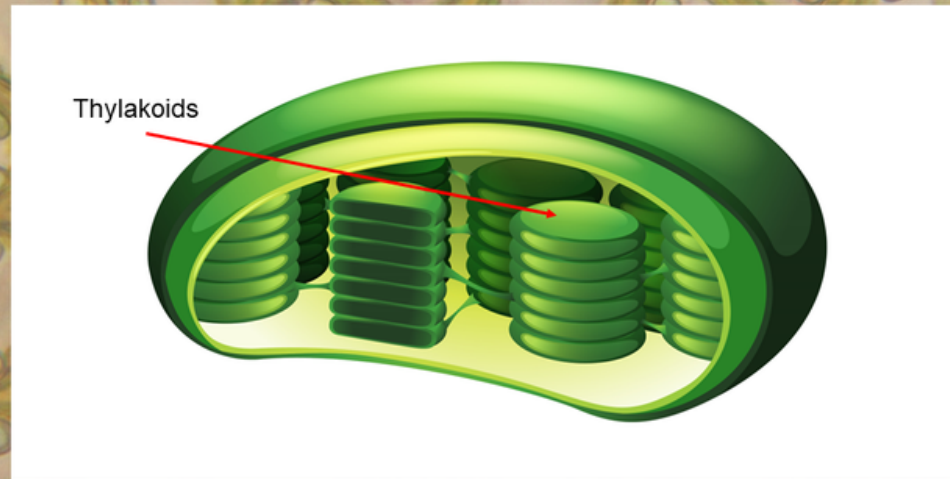
Fluid that fills the chloroplasts and helps to keep things in place.

There are 12 vocabulary cards that come in color and black and white.

Included are suggestions for group activities to do with these each day.

There are also individual cut and paste activities included as well.

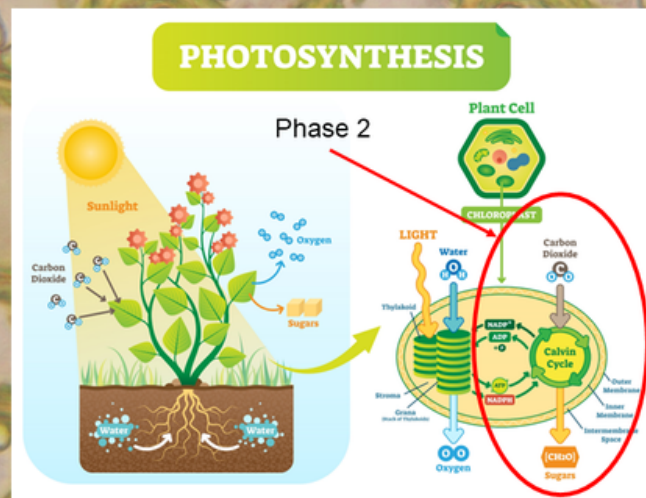
Inside the stroma are small sacks called **thylakoids**. Thylakoids contain pigments that are responsible for making the food for the cell.



50 μ m

©Christa Joy, SNSK

Phase 2 of photosynthesis does NOT require sunlight. Phase 2 turns the ATP into sugar and other compounds the plant can use for energy.



50 μ m

©Christa Joy, SNSK

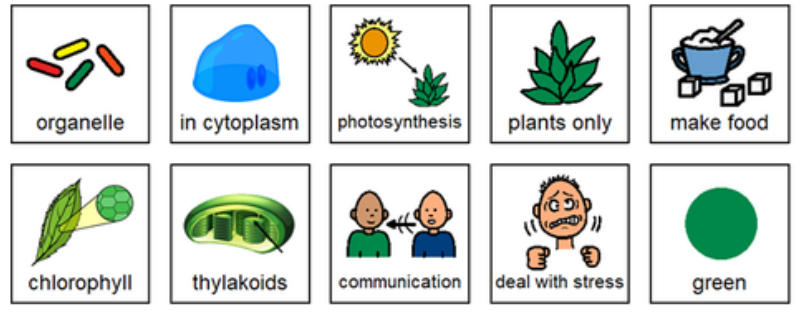
There is a 31-page book with simple text and engaging photos.

It comes in a PowerPoint version as well as a voice-recorded PowerPoint (so you don't have to print it out.)

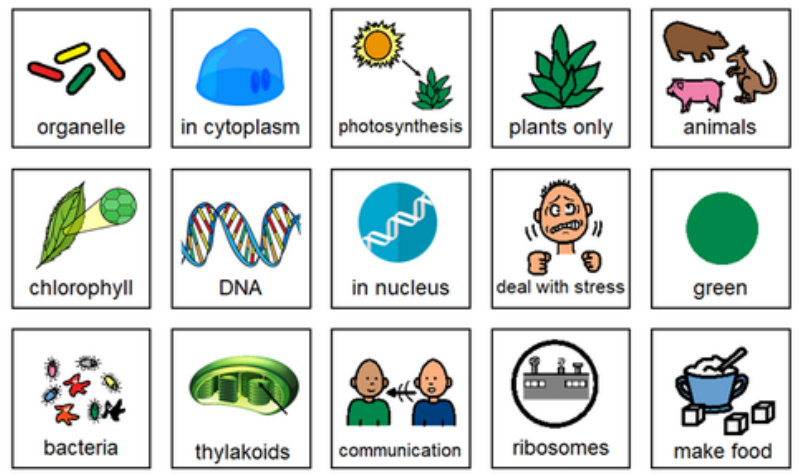
There is also a movie version you can use in google slides.

Errorless version

Cut apart pictures and place in circle map about chloroplasts.



Cut apart pictures and place in circle map **ONLY IF** they relate to chloroplasts.



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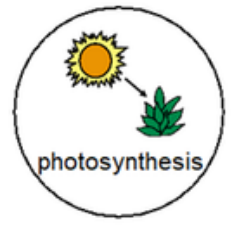
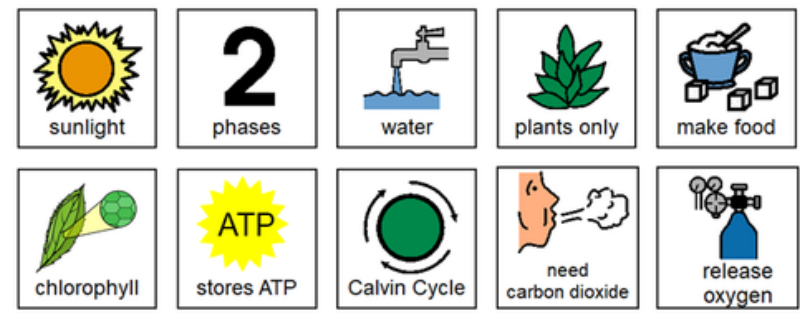
There are 2 circle maps that review the main facts from the book. One is on chloroplasts.

Circle maps are a great way for students to see the concept at a glance. There are 2 versions:

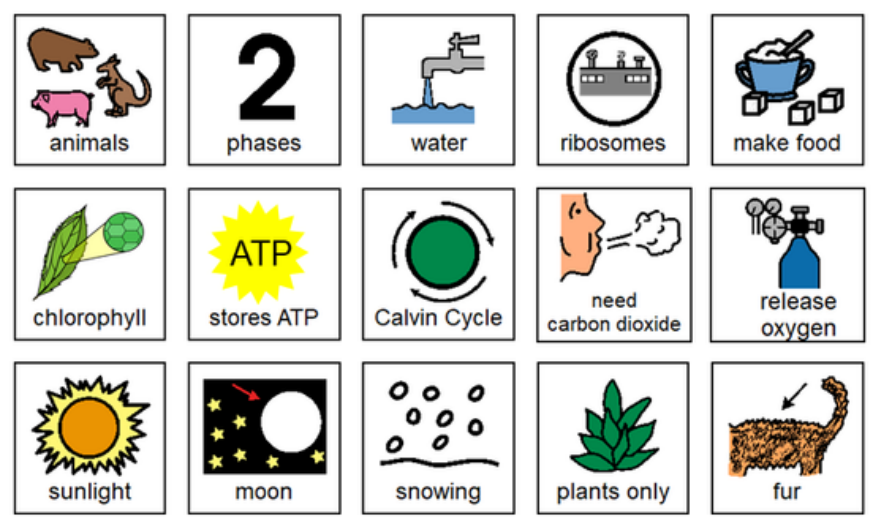
- One is errorless
- One has wrong answers mixed in students will have to set aside

Errorless version

Cut apart pictures and place in circle map about photosynthesis.



Cut apart pictures and place in circle map **ONLY IF** they relate to photosynthesis.







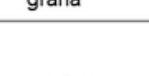


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This one is about photosynthesis as it relates to chloroplasts.







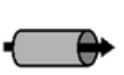
Again, it comes with an errorless option and one with wrong answers mixed in.

Match the function to each part of the chloroplast.












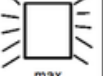


| | |
|---|---|
|  outer membrane |  inner membrane |
|  stroma |  thylakoids |
|  grana |  chlorophyll |
|  lamella | |

The Pi
Wc

Match the function below to the part of the chloroplast responsible.

| | | | |
|--|--|--|--|
|  protect chloroplast |  hold grana in place |  store ATP |  hold chlorophyll |
|  cushion and hold in place |  max surface area |  let things in/out | |

Draw a line matching the part of the chloroplast to its function.

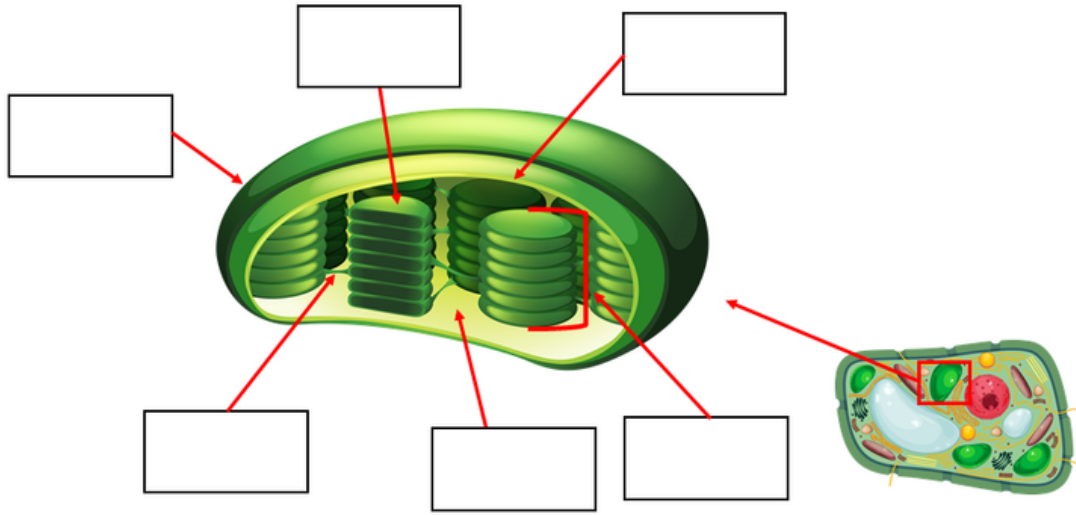
| | |
|---|--|
|  outer membrane |  protect chloroplast |
|  inner membrane |  hold grana in place |
|  stroma |  store ATP |
|  thylakoids |  hold chlorophyll |
|  chlorophyll |  cushion and hold in place |
|  grana |  max surface area |
|  lamella |  let things in/out |

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There is a matching activity,
matching part of the
chloroplast to its function.
There are 2 versions

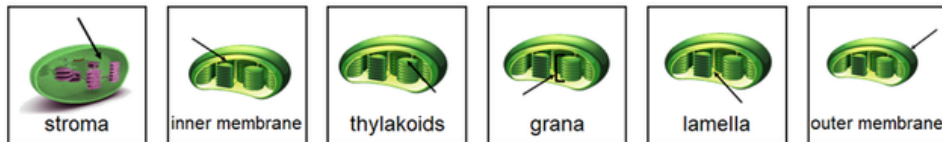
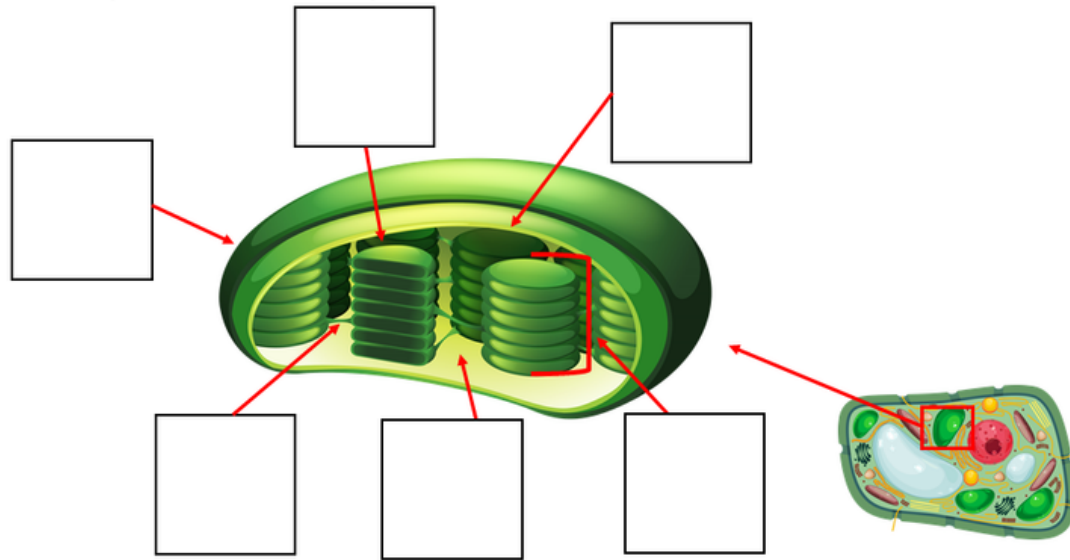
- cut and paste
- drawing a line (includes differentiated version)

Label the parts of the chloroplast.



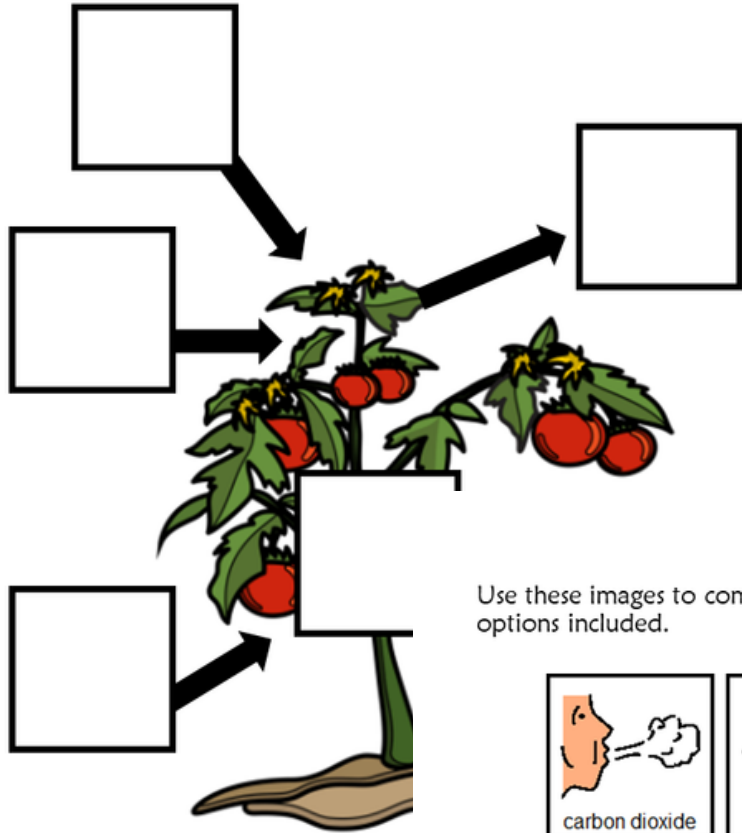
| | | |
|----------------|----------------|---------|
| Outer membrane | Inner membrane | stroma |
| thylakoids | grana | lamella |

Label the parts of the chloroplast.



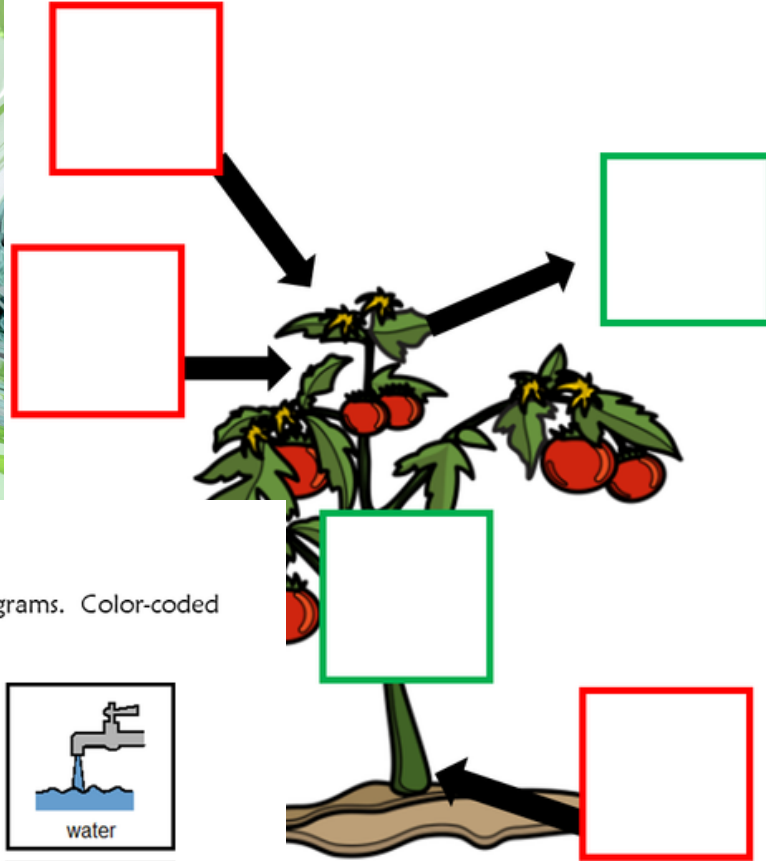
Students will label parts of the chloroplast. There is an option with words only and one with pictures. Suggestions for differentiation are included.

Label the inputs and outputs of photosynthesis.



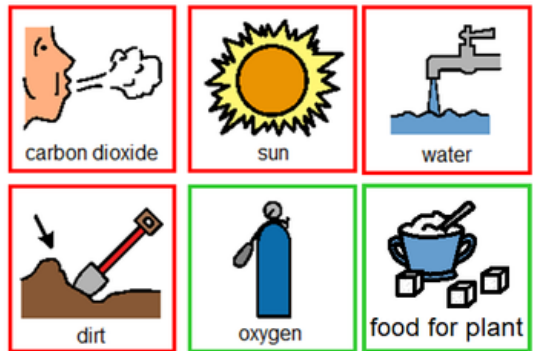
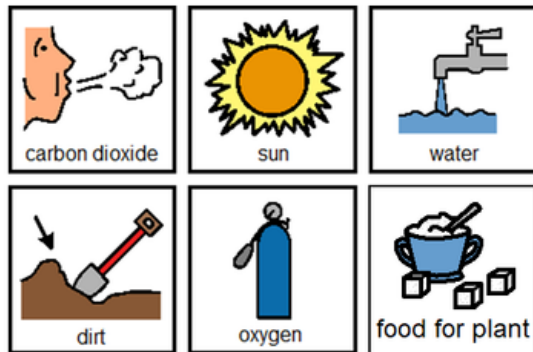
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Label the inputs and outputs of photosynthesis.



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Use these images to complete the diagrams. Color-coded options included.



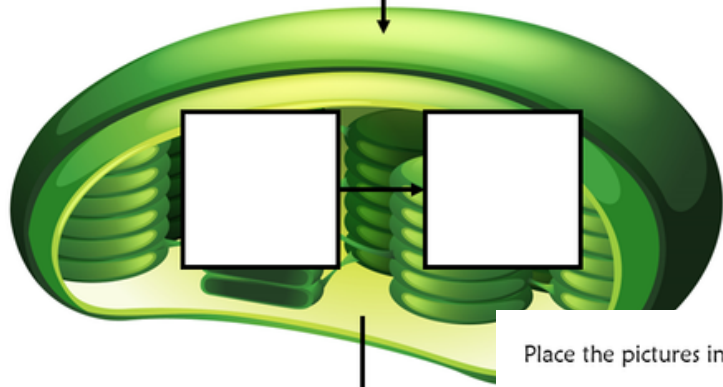
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Students will label the ins and outs of photosynthesis. This is an easier version and applies to the plant as a whole. It comes with a color-coded differentiation for students who need more support.

easier version

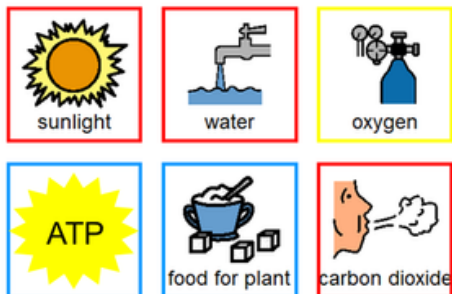
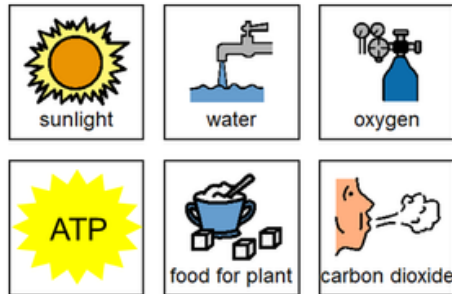
Label what happens during photosynthesis.

Three empty rectangular boxes for labeling the overall process of photosynthesis.



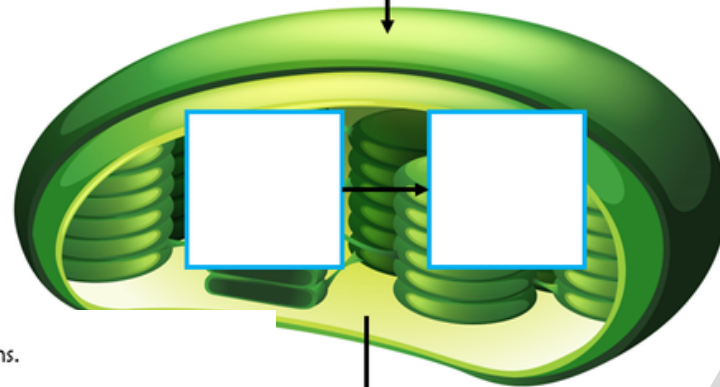
An empty square box for labeling the overall process of photosynthesis.

Place the pictures in the correct locations.



Label what happens during photosynthesis.

Three empty rectangular boxes for labeling the overall process of photosynthesis, outlined in red.



An empty square box for labeling the overall process of photosynthesis, outlined in yellow.

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Students will label the steps of photosynthesis in the chloroplast. It comes with a color-coded differentiation for students who need more support.

Chloroplast

1. The chloroplast is only located in cells.

2. Chloroplasts make for the plant.

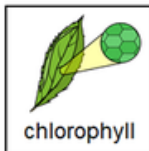
3. Chloroplasts make food through a process called .

4. Inside the chloroplast, there are stacks of .

5. The thylakoids store .



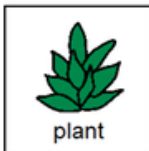
food



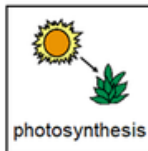
chlorophyll



thylakoids



plant



photosynthesis

Chloroplast

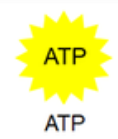
6. The grana help to maximize the to absorb sunlight.

7. Chlorophyll stores the sunlight as .

8. Phase of photosynthesis does not require sunlight.

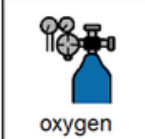
9. The Calvin Cycle turns ATP into for the plant.

10. is not needed by the plant and is released.



ATP

ATP



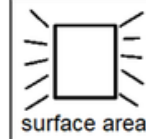
oxygen

2

two



food



surface area

There are 2 fill-in-the-blank worksheets. These allow you to review and find areas that may need to be re-taught before the assessment.

Version 1

1. What do chloroplasts make for the cell?



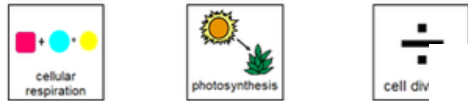
2. Which type of cells have chloroplasts?



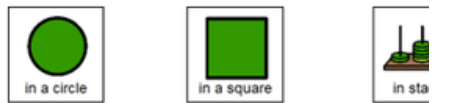
3. What keeps the chloroplasts safe inside the cell's cytoplasm?



4. What is the process chloroplasts use to make energy?



5. How are the thylakoids arranged in the chloroplast?



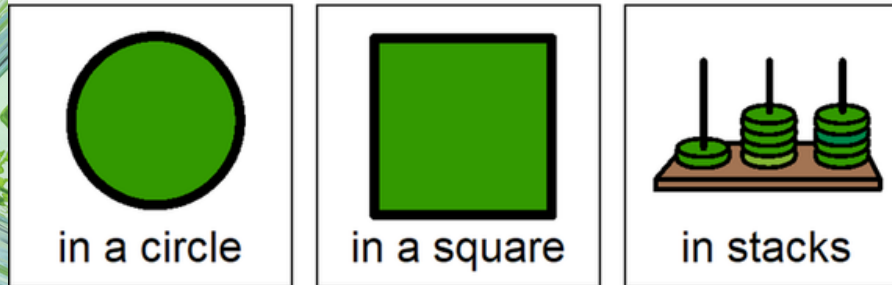
1. What do chloroplasts make for the cell?
 - A. Oxygen
 - B. Food
 - C. DNA
2. Which type of cells have chloroplasts?
 - A. Insect
 - B. Animals
 - C. Plant
3. What keeps the chloroplasts safe inside the cell's cytoplasm?
 - A. Outer membrane
 - B. Lamella
 - C. chlorophyll
4. What is the process chloroplasts use to make energy?
 - A. Cellular respiration
 - B. Photosynthesis
 - C. Cell division
5. How are the thylakoids arranged in the chloroplast?
 - A. In a circle
 - B. In a square
 - C. In stacks
6. What keeps the grana from falling over and stay spaced out?
 - A. Ladder
 - B. Lamella
 - C. Inner membrane

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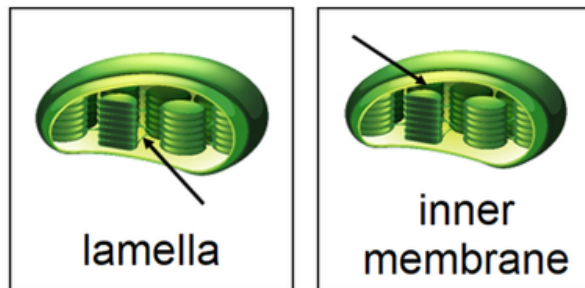
Version 2

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 5



Q 6



Version 3

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There is a 10 question assessment that comes in 3 versions. Answer key included.

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The background of the entire slide is a microscopic view of green water, showing numerous small, green, oval-shaped organisms, likely algae or protozoa, swimming in clear water. In the center, there is a large, semi-transparent video player overlay. The video player has a black background and a white play button icon in the center. Below the play button, the word "Chloroplasts" is written in a large, bold, white sans-serif font. To the right of the title, the author's name "By Christa Joy" is written in a smaller, white sans-serif font.

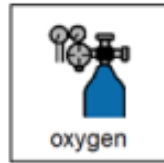
Chloroplasts

By
Christa Joy

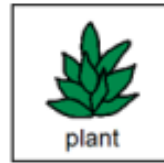
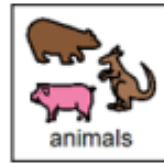
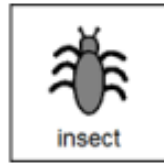
This unit also includes digital versions of the activities.

Students can watch a movie book version of the book rather than printing it out.

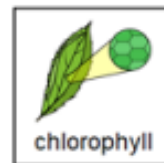
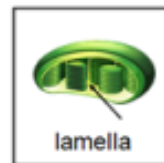
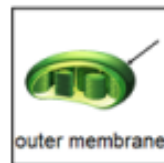
1. What do chloroplasts make for the cell?



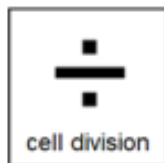
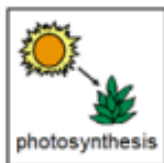
2. Which type of cells have chloroplasts?



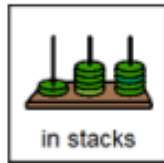
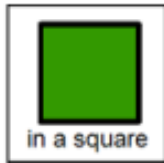
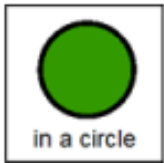
3. What keeps the chloroplasts safe inside the cell's cytoplasm?



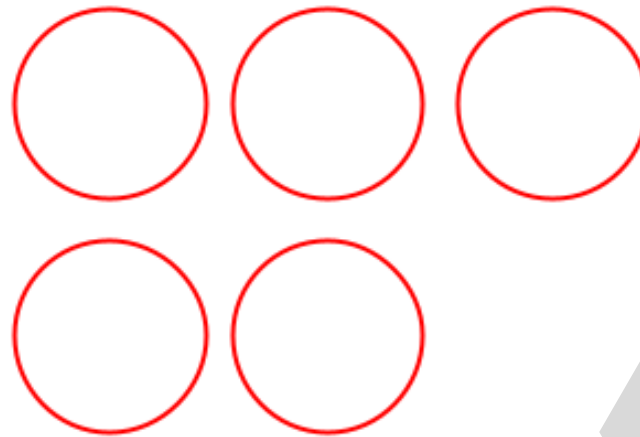
4. What is the process chloroplasts use to make energy?



5. How are the thylakoids arranged in the chloroplast?

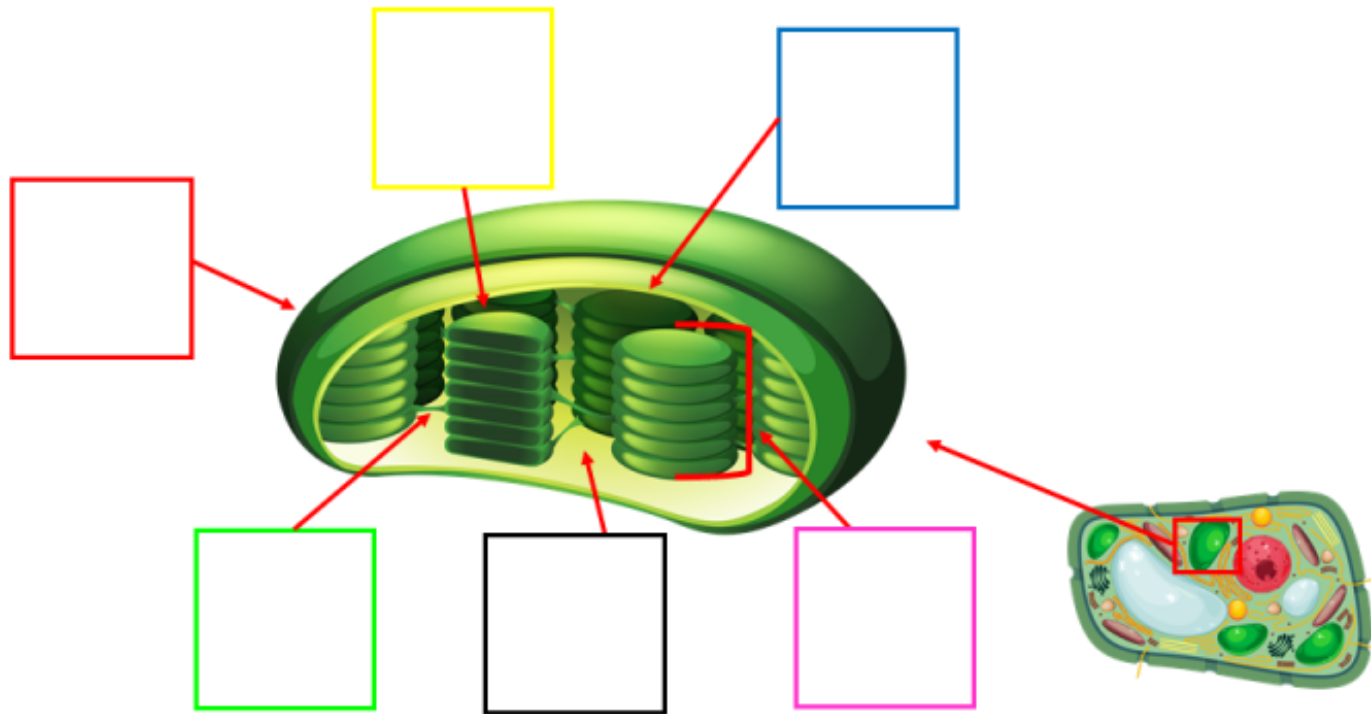


Circle the correct answer.

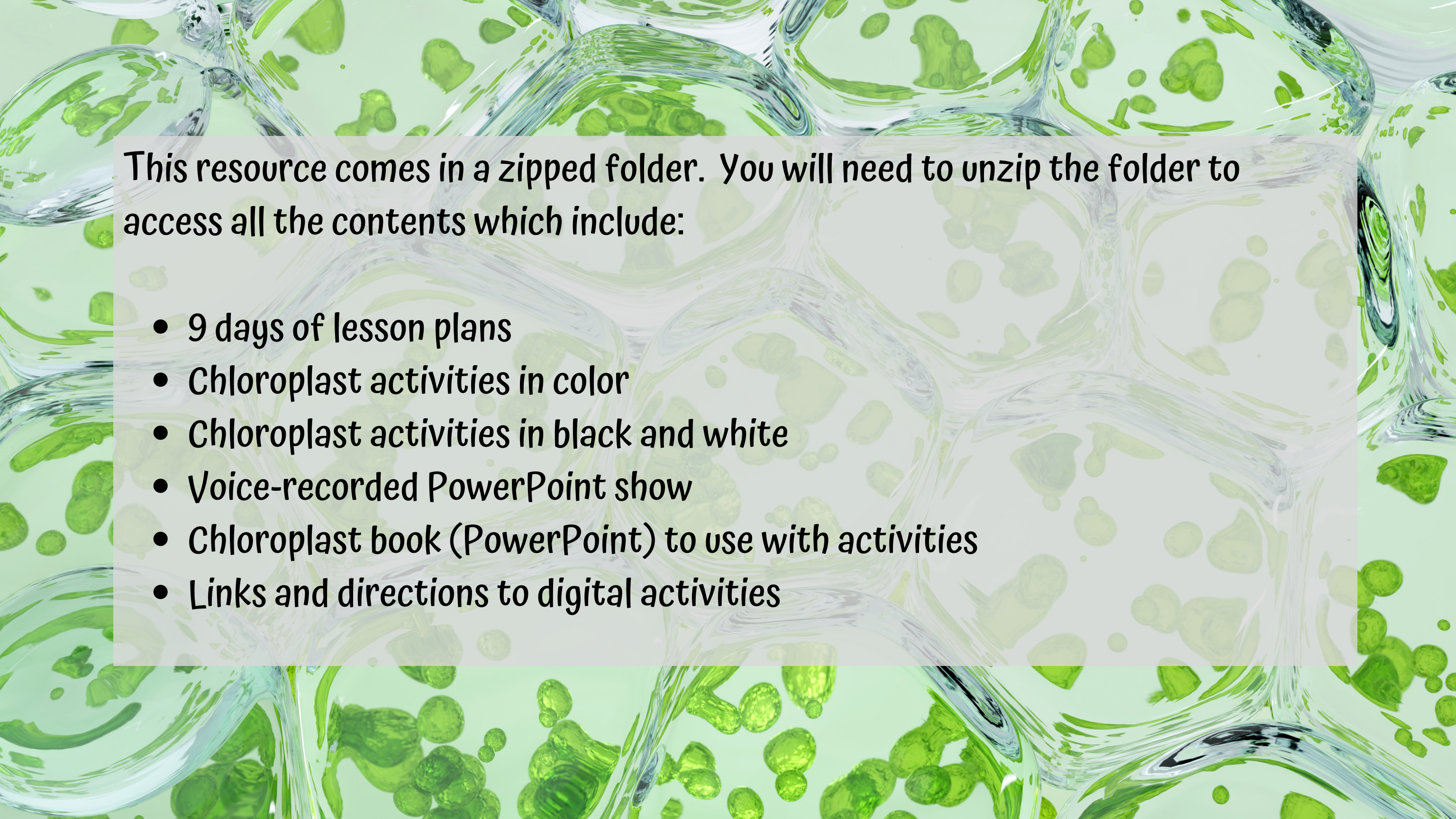


Each activity is set up so students can click and drag answers. No typing is required.

Label the parts of the chloroplast.



The second set of slides uses color for differentiation and extra support for students who may need it. Mix and match slides from both sets to make the perfect set for each student.

A microscopic view of plant cells, showing various green chloroplasts and cell walls. The image is used as a background for a text overlay.

This resource comes in a zipped folder. You will need to unzip the folder to access all the contents which include:

- **9 days of lesson plans**
- **Chloroplast activities in color**
- **Chloroplast activities in black and white**
- **Voice-recorded PowerPoint show**
- **Chloroplast book (PowerPoint) to use with activities**
- **Links and directions to digital activities**

This is a focused unit for students who need more practice with organelles in the cell.

I also have a Biology bundle that is an overview of the cell that includes mitosis and heredity.

CLICK HERE

