SPECIAL ED

GENETICS & HEREDITY

INCLUDES GOOGLE SLIDES

This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, got his blue eyes from me, AND he is able to do this unit. He is my tester!!

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This unit contains almost 200 pages of material, but don't worry I have detailed lesson plans to show you how to make this last 11 days or more.

Everything highlighted in yellow comes with a digital version of the activity.

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

Genes and Heredity 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.
  a. For more info, read more here: https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/
  b. I also have a blog post on differentiating one activity 3 ways: https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/
- *Make you own copies of the activities*: Every day I review the activity we did yesterday. For that reason:
  a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
  b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.

The lesson plans contain:

Overall tips for teaching students with significant needs

Quick Look

Day	Activity	Day	Activity
1	• Book • Vocab cards introduction • Circle map	7	• Book • Vocab cards cut and paste • Word search
2	• Book • Vocab cards activity • Circle map	8	• Book • Vocab cards cut and past Sudoku puzzle
3	• Book • Vocab cards activity • Labeling activity	9	• Book • Vocab cards activity • Close worksheet
4	• Book • Vocab cards activity • Boy or girl activity	10	• Book • Vocab cards activity • Close worksheet
5	• Book • Vocab cards activity • Inherited traits activities	11	• Assessment • Make editable DNA
6	• Book • Vocab cards activity • Inherited traits activities		

The lesson plans contain:

A *quick* look at what you will do each day.

Day 2

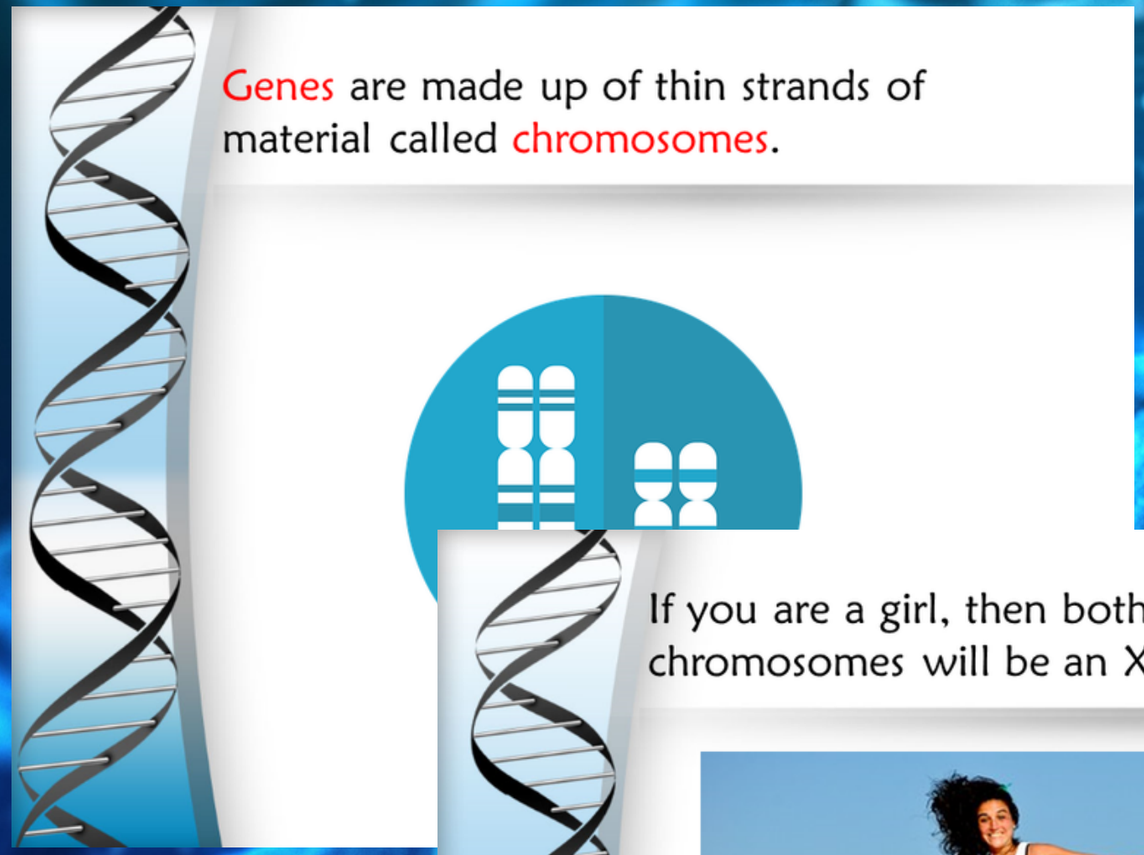
Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book • Vocabulary board

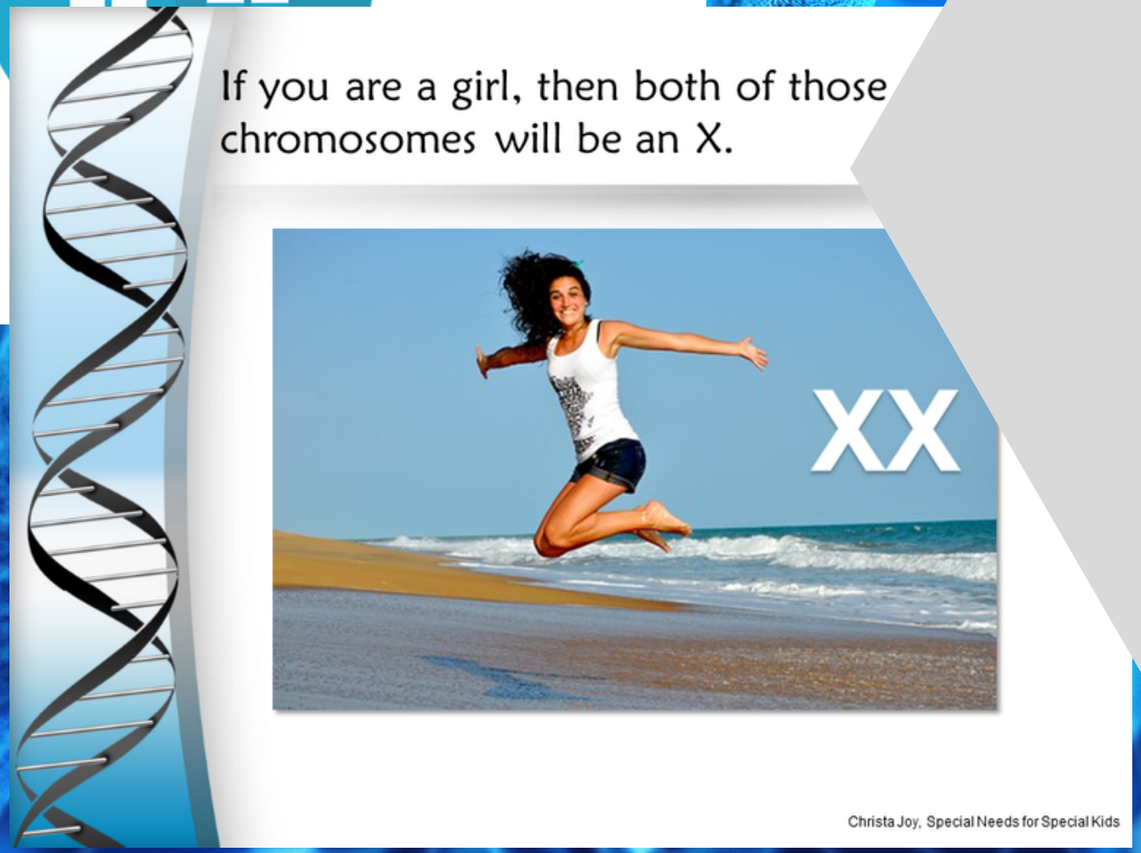
Vocabulary cards I Spy Game (10 minutes)	• I play this game, or variations of it the first few days
	  ○ Determine how many cards your students can handle in front of them.
	• Since this is the first time playing this game, I make it easy. Hold up a card, and have students find the matching one and hold it up
	• Discuss relevant points on the card
	  ○ You can also play this game in this manner having them find the symbol on their vocabulary board
		• Vocabulary cards (student set and teacher set)
		• Vocabulary board

Circle map review (5 minutes)	• Review the circle map completed yesterday	• Circle ma completed yesterday
Circle Map (10 minutes)	• Do the circle map about heredity • Choose the best version (errorless or not) depending on the learning level of your students • Students cut out symbols and place in circle map • Make connections to the book as necessary	• Circle map • Scissors • Glue
Sharing (10 minutes)	• Each student shares their finished worksheet with the group using the communication method of their choice	• Completed worksheet • Communication devices

The lesson plans contain:

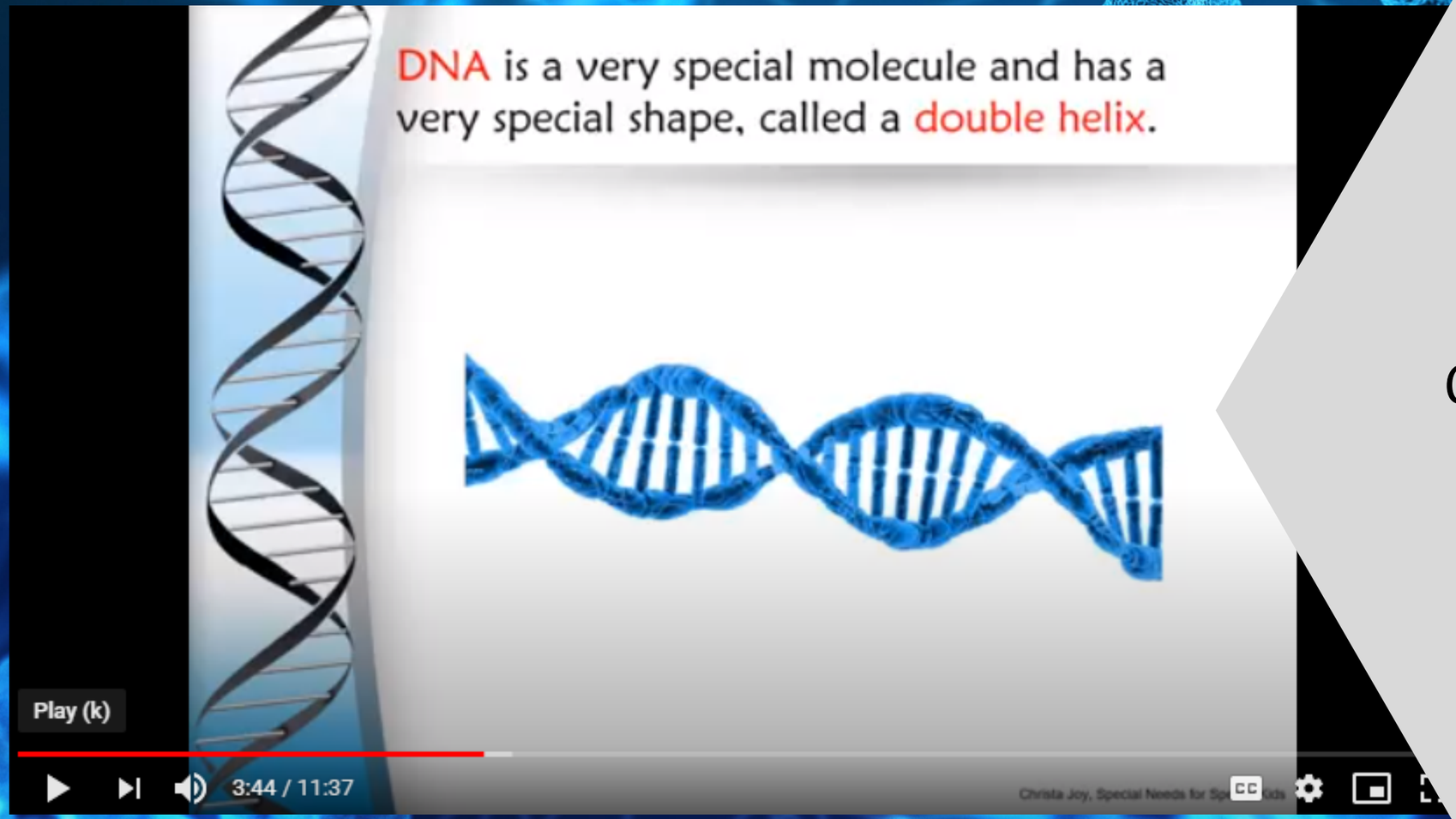
Detailed instructions on how that day's lesson should run.





This unit contains at 62 page book. It has simple text and engaging photos. I encourage teachers to start EVERY lesson with this book.

It comes in a PowerPoint, voice recorded version and movie so you don't have to print it out.

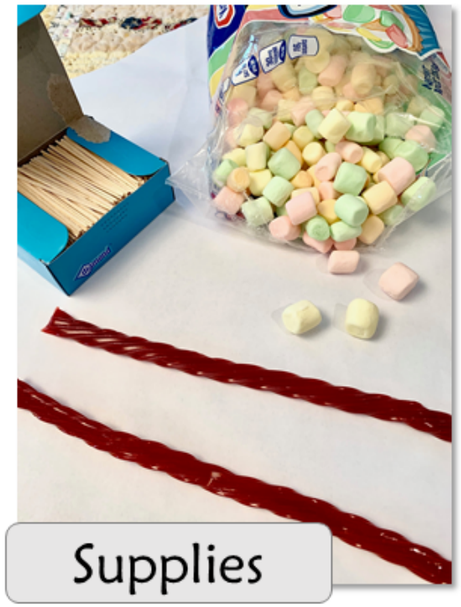


There is an mp4 version of the book which you can play in google or other online platform.

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!!



Supplies

Make pairs

Connect to backbones

Twist

There are directions on how each student can make their own strand of edible DNA.

double helix

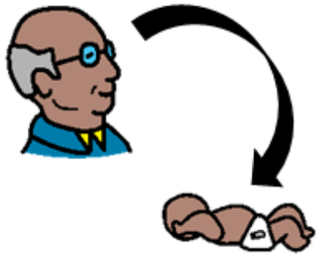
The shape of DNA. Looks like a twisted ladder.

Watson & Crick

Discovered the double helix shape which helped scientists learn even more about DNA.

heredity

When certain traits are passed down from one generation to the next.



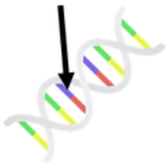
dominan

When present, this trait will
seen, like brown eyes.

This unit comes with 20 vocabulary cards.

Every day students will do a group activity using these cards to get more familiar with words that are likely new to them.

genetics	gene
Learning how traits are passed down from parents to offspring.	Made up of DNA. Carry the information about the specific traits that are passed down.
DNA	**chromosome**
The actual code or information about the traits.	Made up of DNA, they tell the cell what to do.

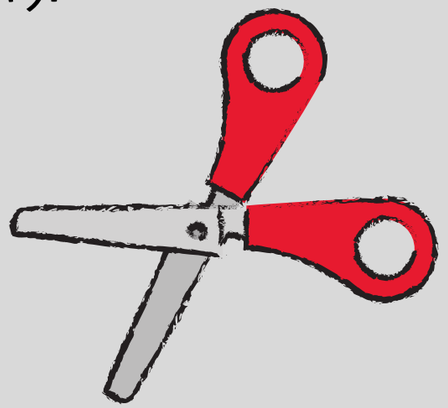
Gregor Mendel	allele
	
nucleotide	**nucleus**
	

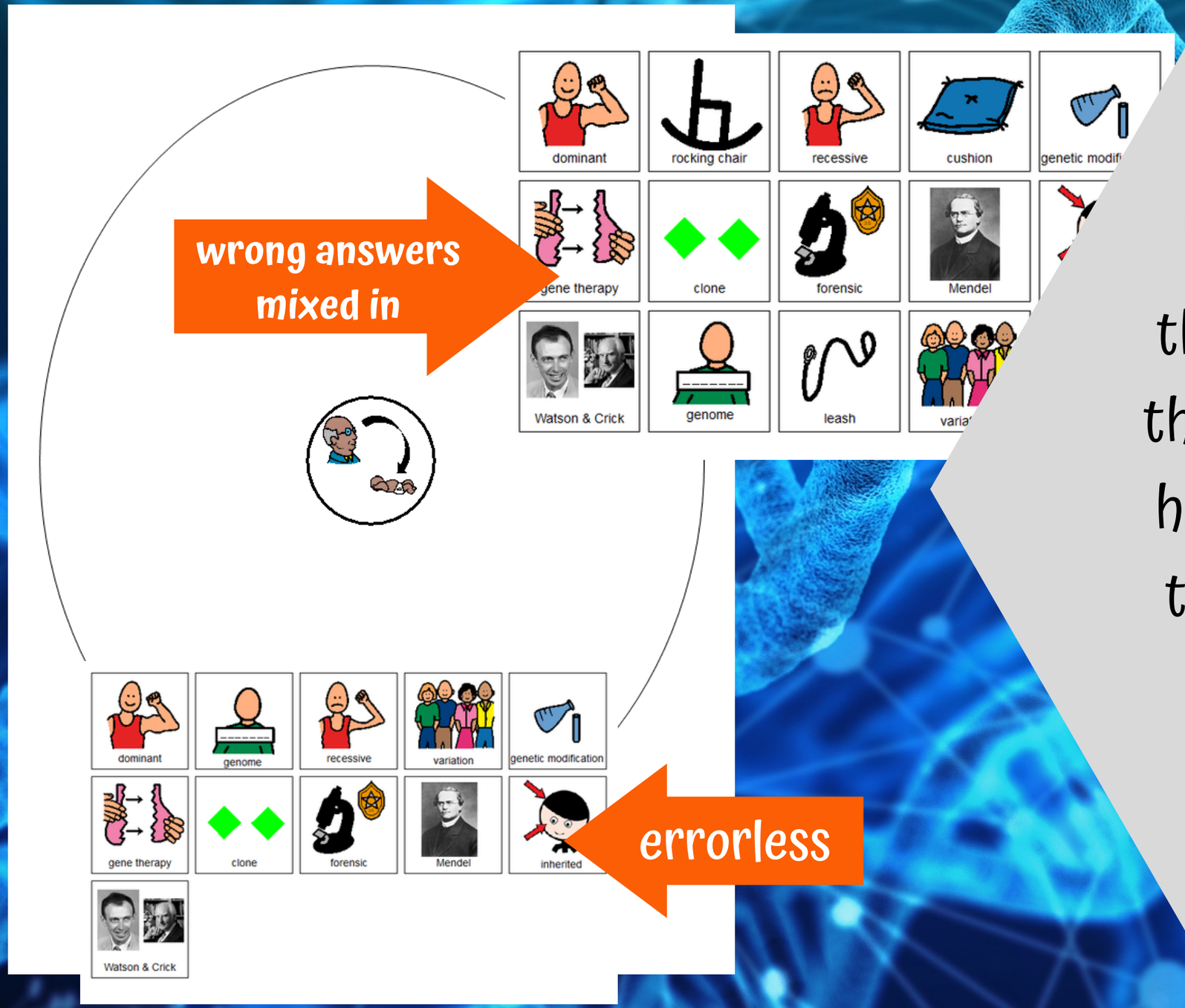
The brain of the cell. Contains the chromosomes that tell the cell what to do.	Made abou
This trait will only be seen if you have 2 matching genes of the same trait, like blue eyes.	When certain one gen
Made up of DNA, they tell the cell what to do.	Accidents that occur w down from par
When doctors can fix a broken gene. They are still working on this.	Specific sequence of DNA t traits like hair or eye c
When present, this trait will always be seen, like brown eyes.	The traits you inherit mix and comb different ways so we all look differen one another.

Students will also test their knowledge of these new words and symbols with a cut and paste activity on days 7&8.

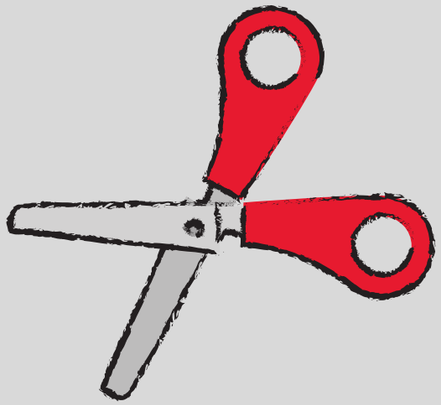
Students match the picture to the definition (easier).

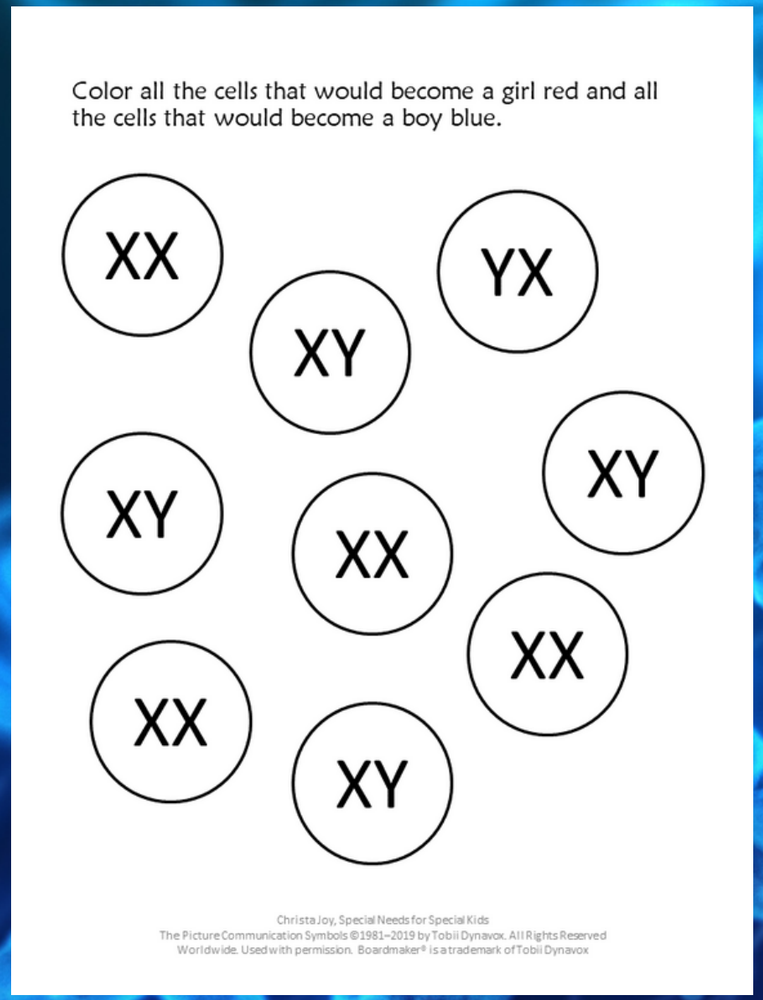
Or, students match the definition to the picture (harder).

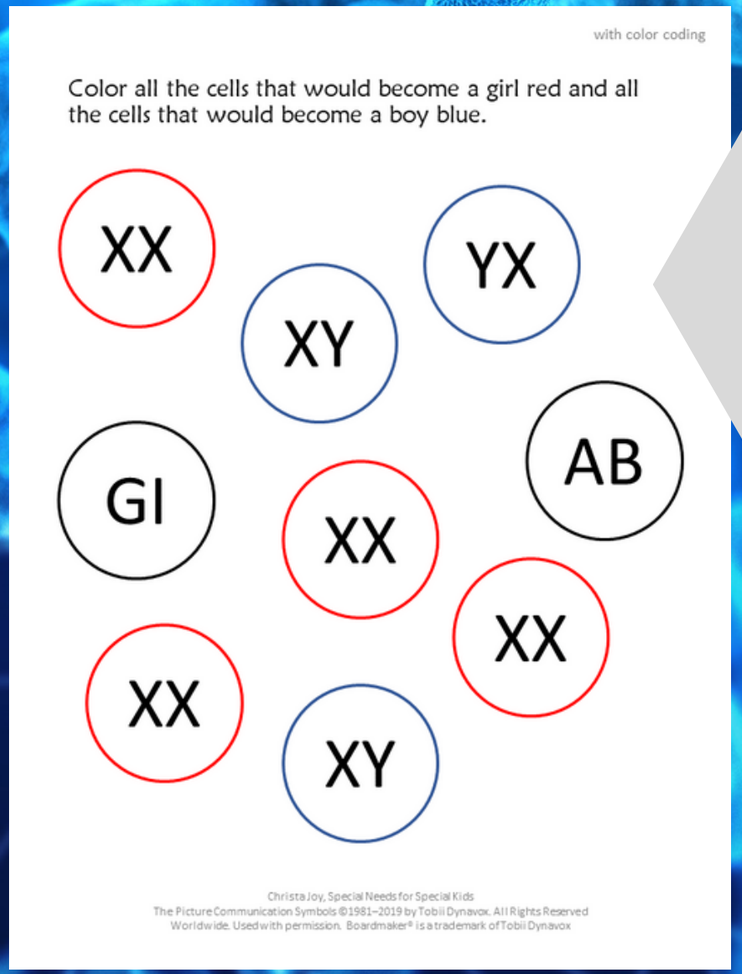




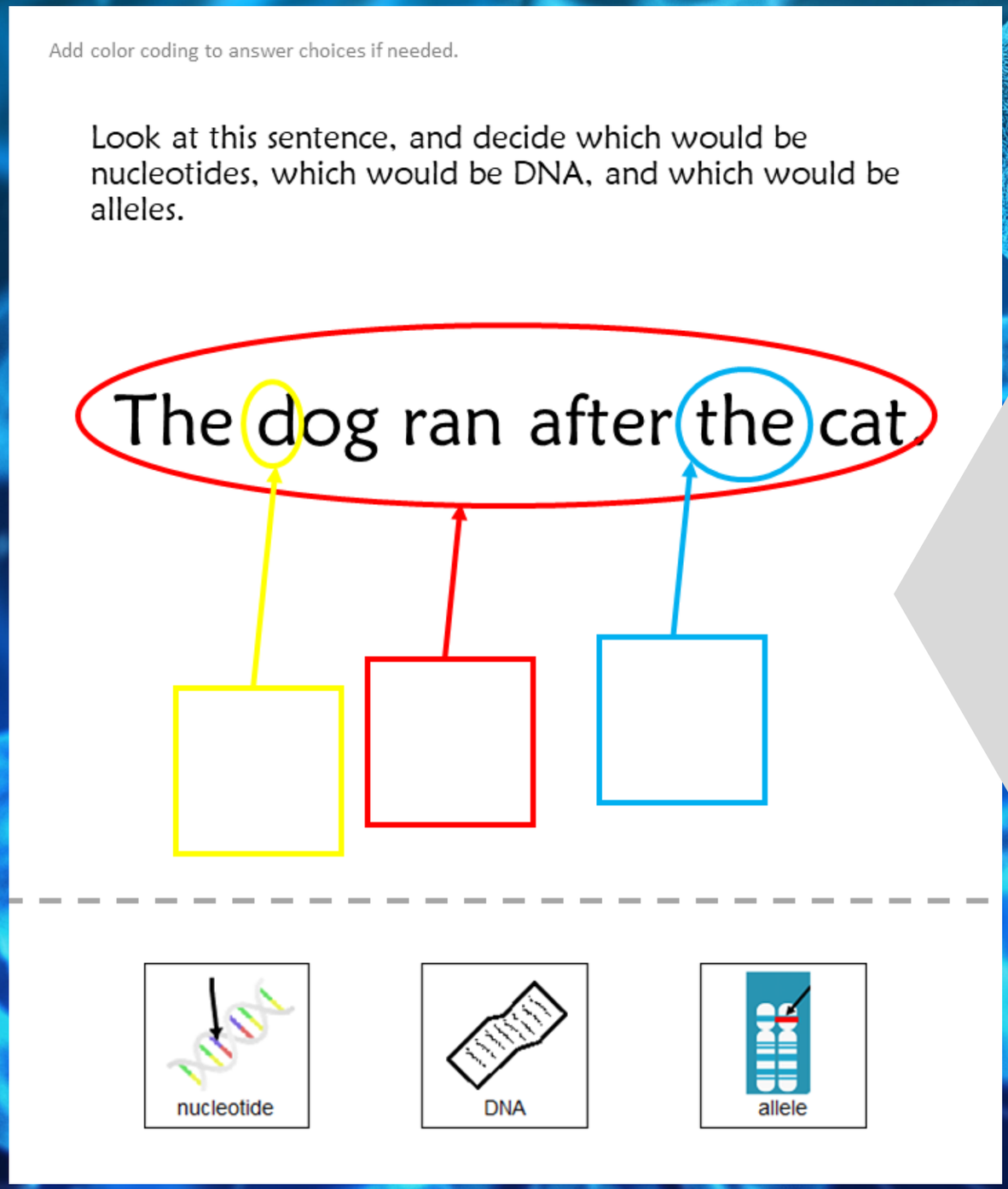
There are 2 circle maps in this unit. Each has a version that is errorless and one that has wrong answers mixed in that students will set aside.





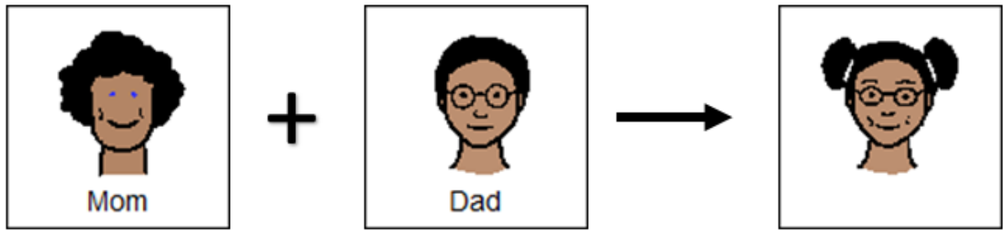


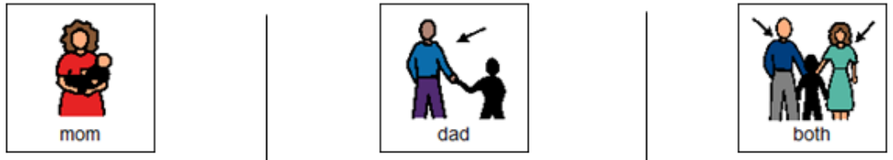
There are is an activity where students will look at a cell and determine if if would be a boy or a girl. A color coded version is included.



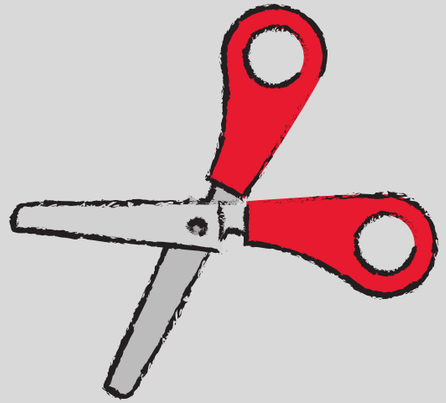
There are labeling worksheets included in this unit. Each one comes in a color coded option. Students look at a simple sentence and label it as though it were a strand of DNA.

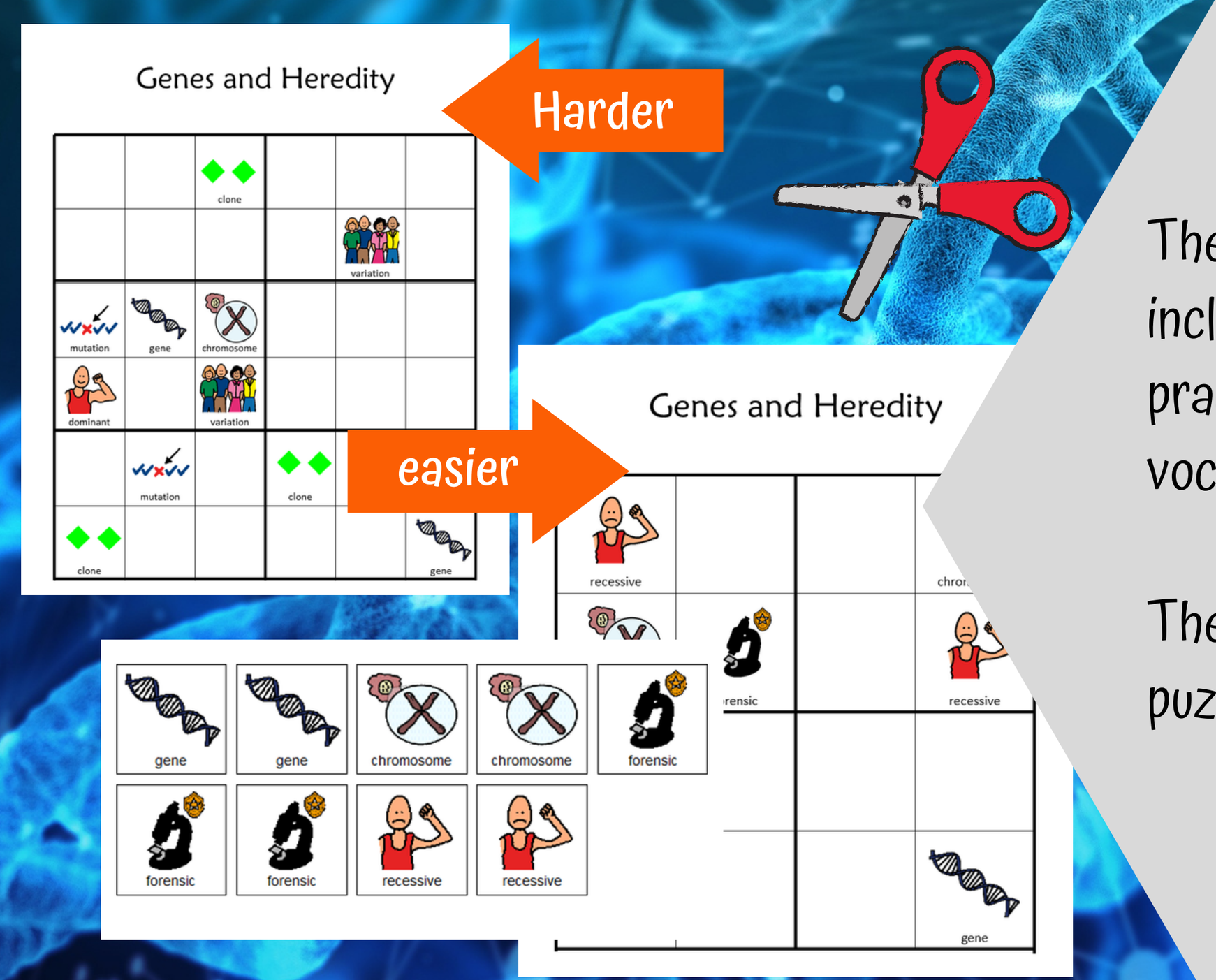
How to this is modeled in the book.





Students will look at a family and practice identifying which traits came from which parent. Suggestions for differentiation are included.





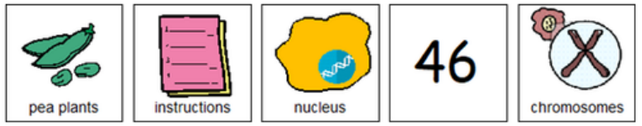
There are 2 Sudoku puzzles included. These are to help practice more with the new vocabulary.

The hard version is a 6x6 puzzle. The easy one is 4x4.

Answer key included.

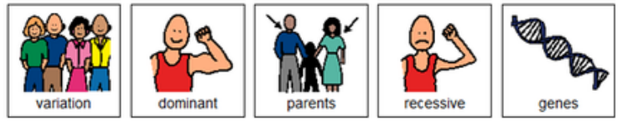
Genes

1. The instructions for the cell are found in the [ ] .
2. Genes carry the [ ] for the cell.
3. Genes are made of DNA which consist of [ ] .
4. Every person has [ ] chromosomes.
5. Gregor Mendel, the father of genetics, worked with [ ] .



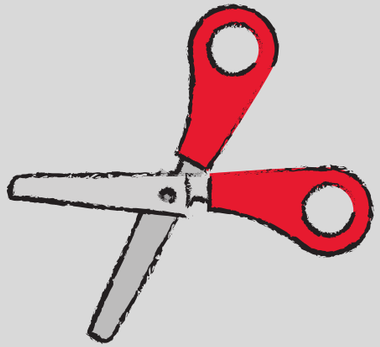
Heredity & Science

1. Heredity looks at traits that are passed down from [ ] to child.
2. Some traits always show up and are [ ] .
3. [ ] traits need the same gene from Mom and Dad.
4. The genome is the complete set of [ ] for a plant or animal.
5. [ ] allows there to be differences in the population.



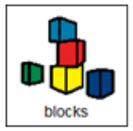
There are 4 close worksheets included for a review. 2 cover genes and 2 cover heredity and science.

Answer key included.

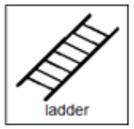


Version 1

1. These are the basis of heredity and are made of DNA.

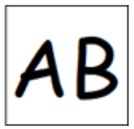


2. We have 46 of these and they are found in the nucleus.

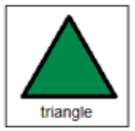


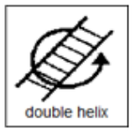
3. Alleles are sequences of DNA that determines things like:

4. Which of the following chromosome sets would be a girl?



5. What is the shape of a DNA molecule?

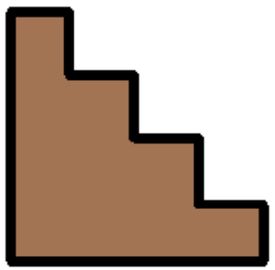




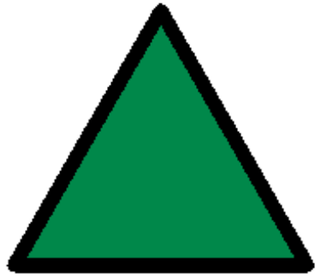
FINALLY the assessment!! There are 3 versions. This version has 10 questions with 3 picture choices for each question.

Answer key included.

Q 5



staircase



triangle

double helix

Q 6

dominant

recessive

mutation

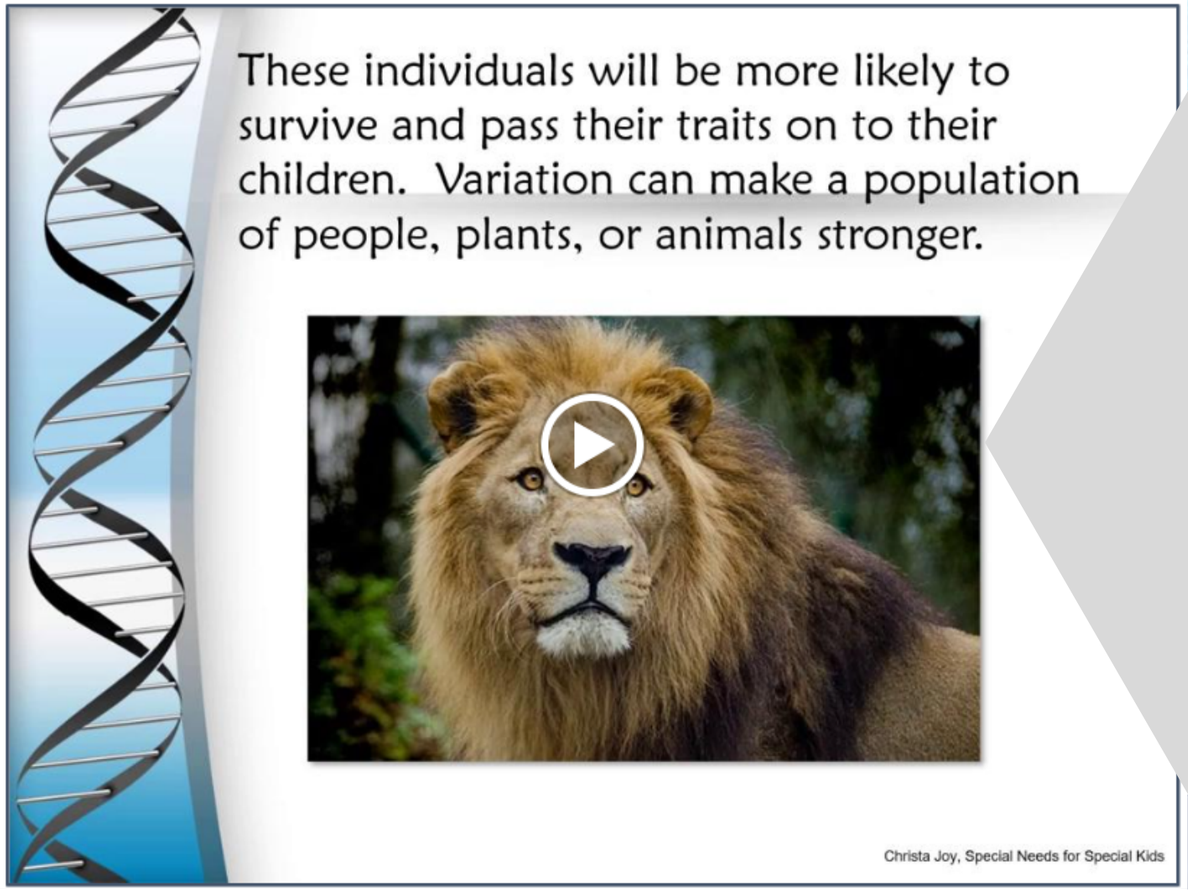
With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.

Version 3

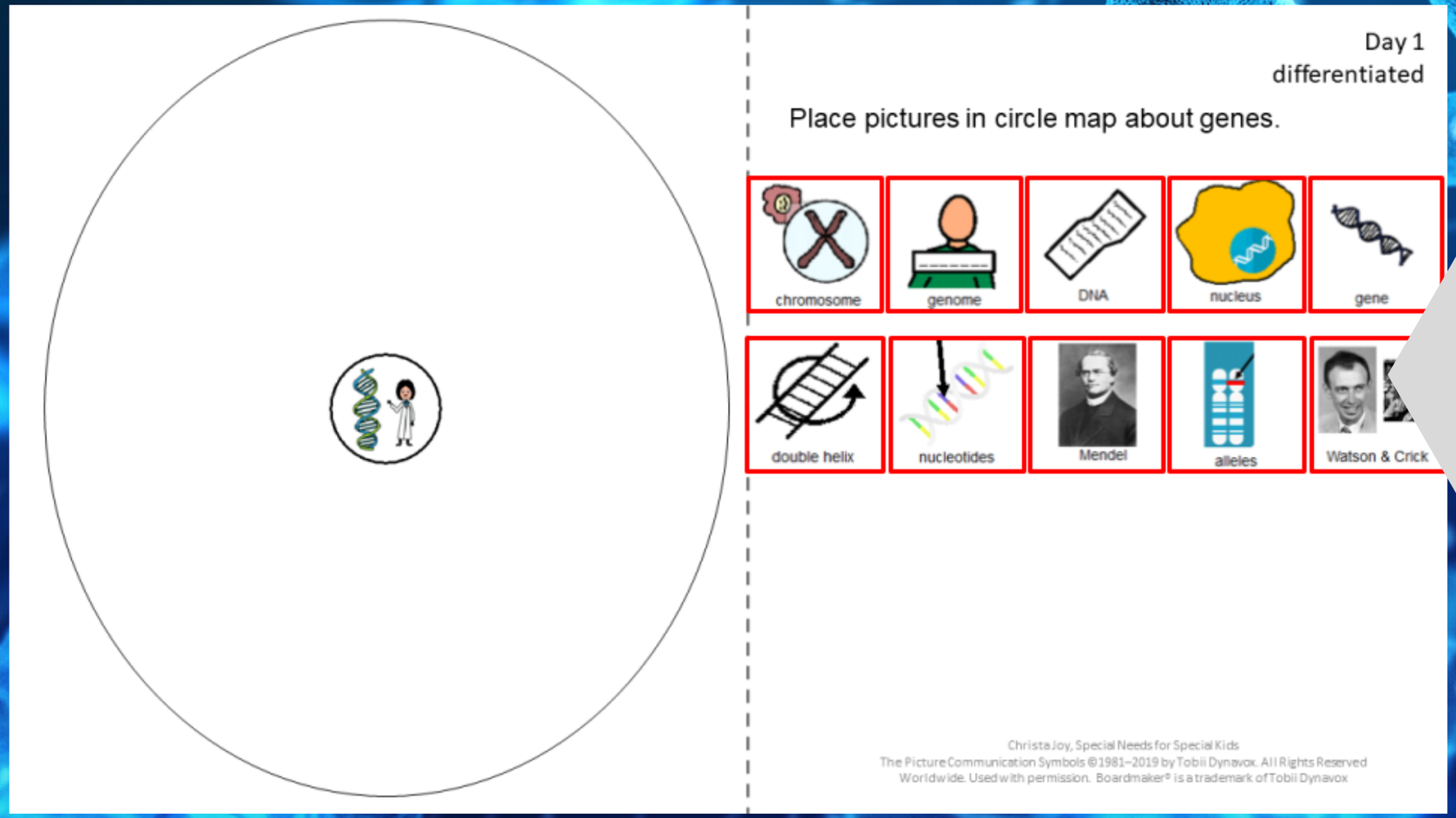
1. These are the basis of heredity and are made of DNA.
   A. blocks
   B. mutations
   C. genes
2. We have 46 of these and they are found in the nucleus.
   A. chromosomes
   B. genomes
   C. ladders
3. Alleles are sequences of DNA that determines things like:
   A. hair color
   B. address
   C. language you speak
4. Which of the following chromosome sets would be a girl?
   A. XY
   B. XX
   C. AB
5. What is the shape of a DNA molecule?
   A. staircase
   B. triangle
   C. double helix
6. These genes are stronger and are always visible when present.
   A. dominant
   B. recessive
   C. mutation

There is also a traditional multiple choice version. You can also use this to record student answers if using the version with index cards.

Watch the movie on Genes and the Magic Code



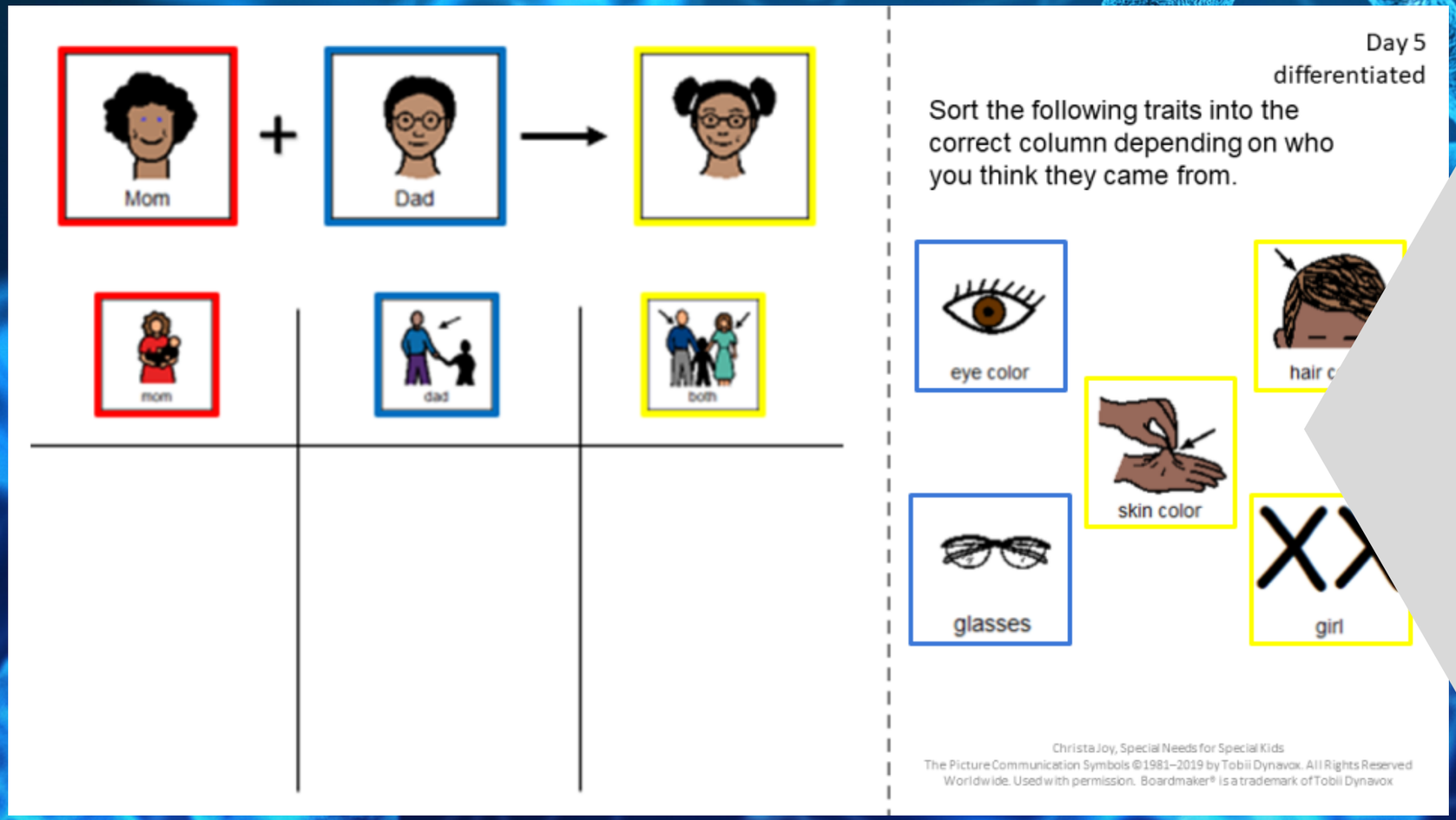
This unit also has digital activities. There is a movie version of the books students can listen to read aloud.



Day 1
differentiated

Place pictures in circle map about genes.

The digital activities have students click and drag their answers.



Day 5
differentiated

Sort the following traits into the correct column depending on who you think they came from.

There are 2 sets of slides. One set has color-coding for more support.

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

- 11 days of lesson plans
- Genes and Heredity activities in color
- Genes and Heredity activities in black and white
- Genes and Heredity book (PowerPoint) to use with activities
- Links and directions to digital activities