

# Students will identify and describe

**Directions:**

- Identify the net force
- drag and drop the labels to explain if they are balanced or unbalanced and if the motion will change
- explain what is happening to the person in the school bus and why

Identify the net force for each object and then use the labels to explain if the forces are balanced or unbalanced and if they will change their motion

**Newton's 1st law**

500N 200N

30N 50N

40N 40N

Net Force= #

Net Force= #

Net Force= #

**Unbalanced**

Change in motion to the right

**Balanced**

**Newton's 2nd law**

**Newton's 3rd law**

**Wrap Up**

Start Moving

Stop Moving

SCHOOL BUS

SCHOOL BUS

Use your knowledge of Newton's 1st law to explain what is happening to the person in the pictures and why.

Add text

**Newton's 1st law**

What happens when the sleds collide

For knowledge of Newton's 1st law to why it's important to wear seatbelts

**Newton's 1st law**

**Newton's 2nd law**

**Newton's 3rd law**

**Wrap Up**

Sledder B  
Mass= 90kg  
Acceleration=  $7\text{m/s}^2$

Sledder B

Force of sledder B= #

Explain what would happen to the motion of sledder A and sledder B when they collide into each other.

Add text

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# Students will analyze and explain

**Directions:**

- drag and drop the circles to identify which object would require more force
- Solve for force, mass, and acceleration
- Drag the combination of bowling ball and acceleration that would result in a force greater than

**Identify:** Circle the object in each box that would require more force to accelerate it  $30 \text{ m/s}^2$ .

**Calculate:** Find the force, mass, or acceleration

Force=  $50\text{N}$       Force=  $200,000\text{N}$   
 Mass =  $4\text{kg}$       Acceleration=  $50\text{m/s}^2$

Acceleration= #      Mass= #

To knock over all of the bowling pins and earn a that is greater than  $750\text{N}$ . Choose the combination acceleration that would result in a force that is g than  $850\text{N}$

Bowling ball      Acceleration

6kg      4kg      5kg       $140 \text{ m/s}^2$        $160 \text{ m/s}^2$

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**Directions:**

- identify the reaction force for the two top pictures
- Drag the picture that shows what would happen after the collision
- Explain how each bumper car would move

**Identify:** What would the reaction force be for each picture.

Action      Action  
 $300\text{N}$        $300,000\text{N}$

Reaction      Reaction

The truck in the picture weighs  $1,500\text{kg}$  and is moving  $20\text{m/s}^2$ . The car weighs  $500\text{kg}$  and is moving  $0\text{m/s}^2$ . Drag the correct picture that shows what would happen when the truck hits the car onto the green square

Before collision      After collision

Mass=  $120\text{kg}$       Mass=  $105\text{kg}$   
 Acceleration=  $15 \text{ m/s}^2$       Acceleration=  $18 \text{ m/s}^2$

How would the bumper cars move after the collision?

Add text

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# Teacher directions and answer key provided

## Directions:

- identify the reaction force for the two top pictures
- Drag the picture that shows what would happen after the collision
- Explain how each bumper car would move

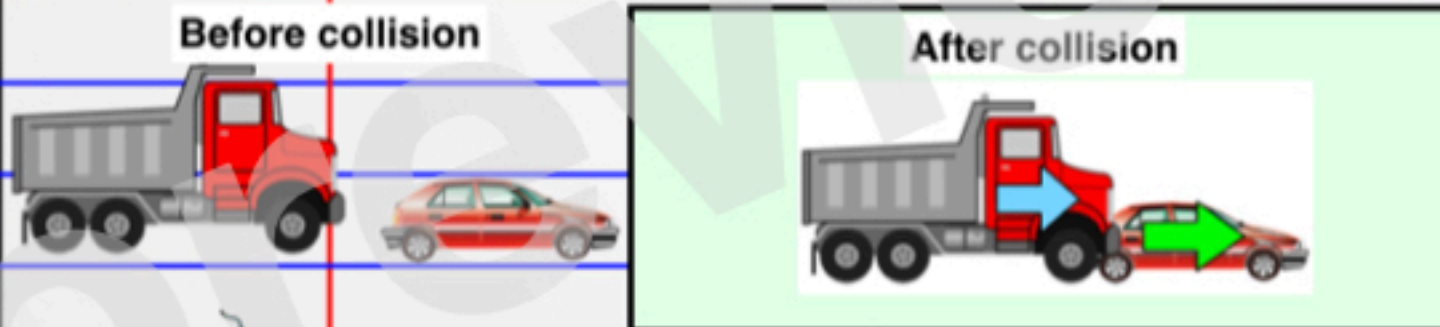
Identify: What would the reaction force be for each picture.



Newton's  
1st law

Newton's  
2nd law

The truck in the picture weighs 1,500kg and is moving  $20\text{m/s}^2$ . The car weighs 500kg and is moving  $0\text{m/s}^2$ . Drag the correct picture that shows what would happen when the truck hits the car onto the green square



Newton's  
3rd law



Wrap Up

How would the bumper cars move after the collision?

The both bumper cars would move backward, however the blue car would move backward faster and farther since it has less mass.

# Teachers: click on the titles in the red box to download the digital notebook to their google drive

## Teachers Guide

### What You Will Need To Get Started:

1. Download link for the Google Resource

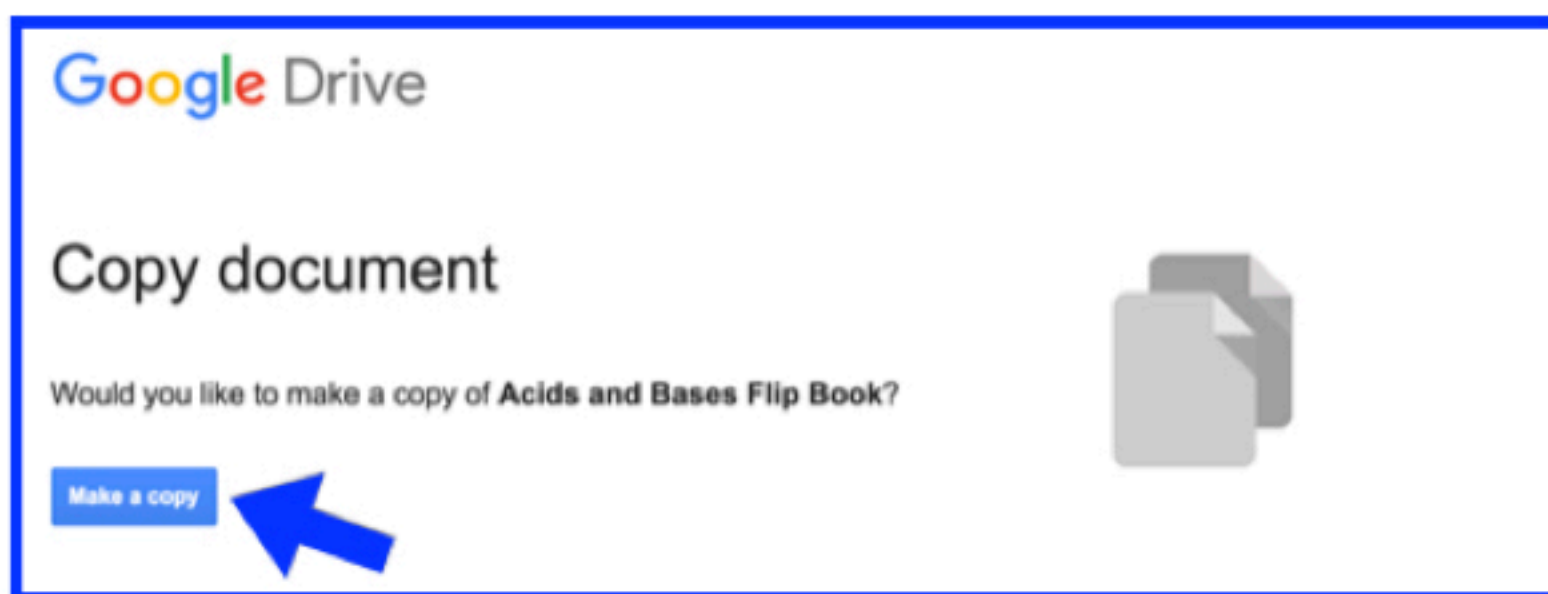
**Cell Cycle Digital Interactive Notebook Student**

**Cell Cycle Digital Interactive Notebook Teacher**

2. Access to the Internet and a Google Account (Free)

3. Google accounts or Microsoft OneDrive accounts for your students to save their work

4. Open the file on your Google Drive. The link will prompt you to make a copy



5. This new copy is now yours to edit and share with your students

6. Printer access if you choose to print the finished product as an actual flip book



# Teacher directions on how to share with students in google classroom, microsoft one drive, or any other LMS

## How to use this resource with your student:

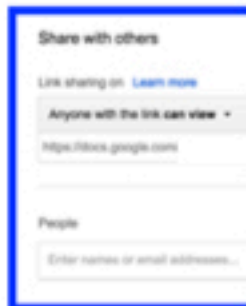
### Google Directions:

1. After you have made your own copy of the resource from the link, you will want to make a copy for your student.

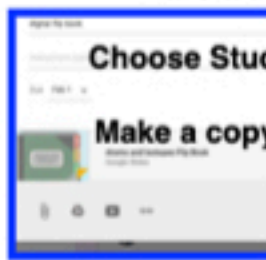
-Some options for this

- A. Give the students the link to your resource and make it "view only" this will allow students to make their own copies without affecting the original. To do this go to the blue SHARE button in the top right corner >get shareable link> choose people with a link can view > copy the link

- **Remember**, when sharing a link on an open class



- B. Use google resource to make a copy



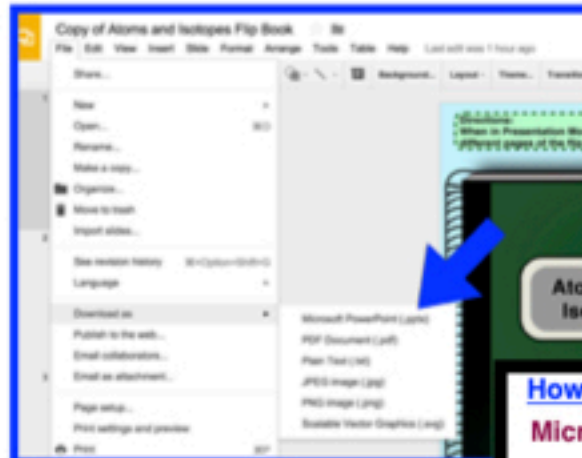
2. Students will be able to automatically save.

3. Students may share

## How to use this resource with your student:

### Microsoft OneDrive Directions:

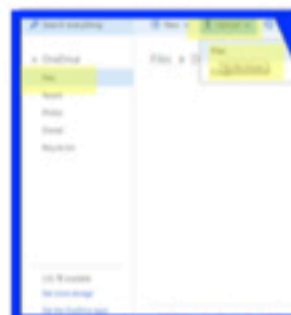
1. After you have made your own copy of the resource from the link, you will need to download your copy as a ppt to your desktop. To do this from the menu to FILE > Download as > Microsoft PowerPoint (.pptx)



2. Open your OneDrive. Create a folder for this step is recommended to keep you and your



3. From the menu, select Upload > Files from your computer or select the file and upload



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## How to use this resource with your student:

### Microsoft OneDrive Directions:

4. Make sure that you open the resource to make sure it is in good working order before sharing it with your students.

5. You will want to interact with the digital flip book in the "edit mode". This allows you to add their own text and move the pieces.

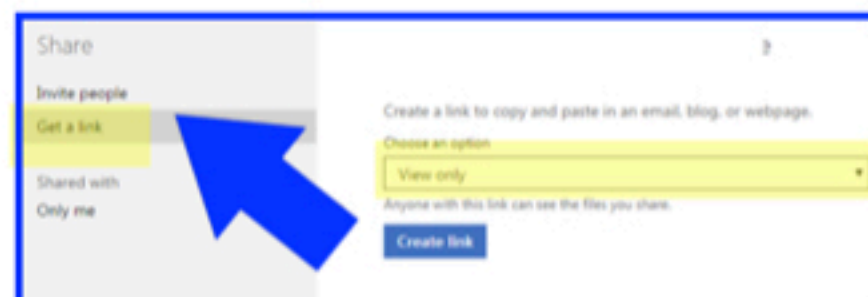
6. You will be prompted to choose to edit the file in PowerPoint or online. Select online. It will then open in a browser.

7. Follow your normal steps in sharing the file with your students. Go to Share > Share with people



8. Choose the option to view only. Then require your students to make a copy in their own drive before editing the file. This ensures your students do not edit your file.

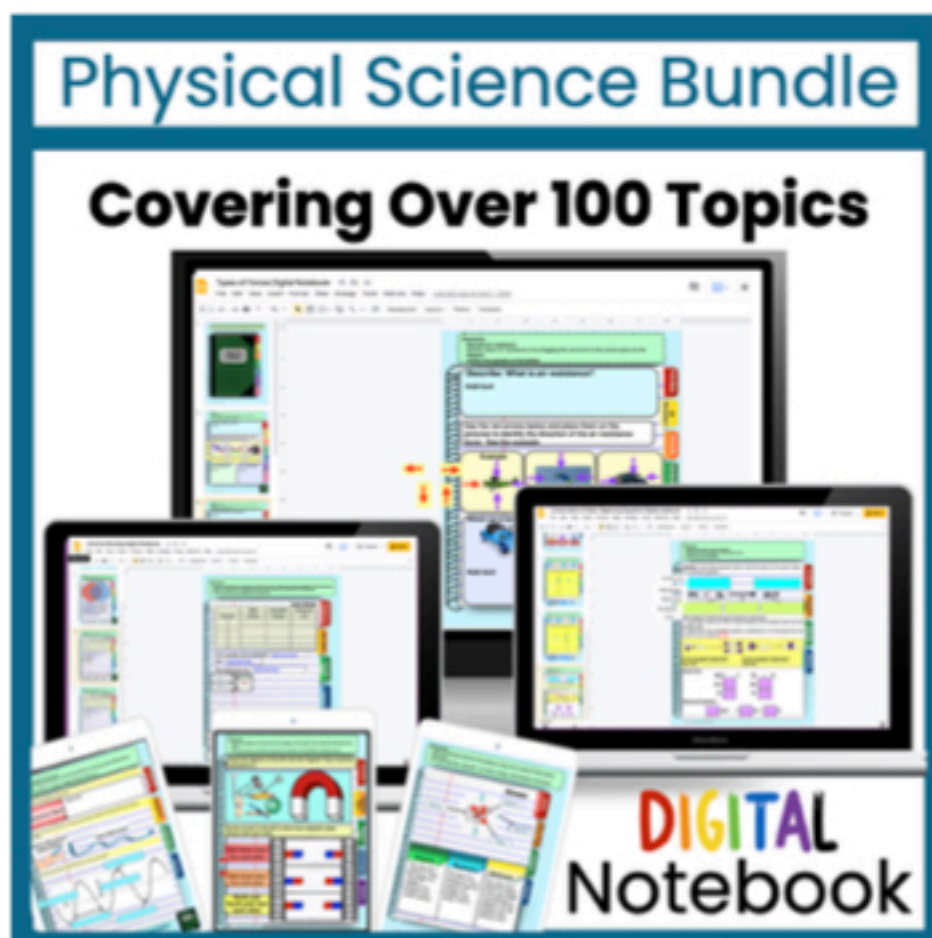
- **Remember**, when sharing your link with your students make sure it is a secure format that requires a log in password and not on a personal, school, or district that can be accessed by anyone



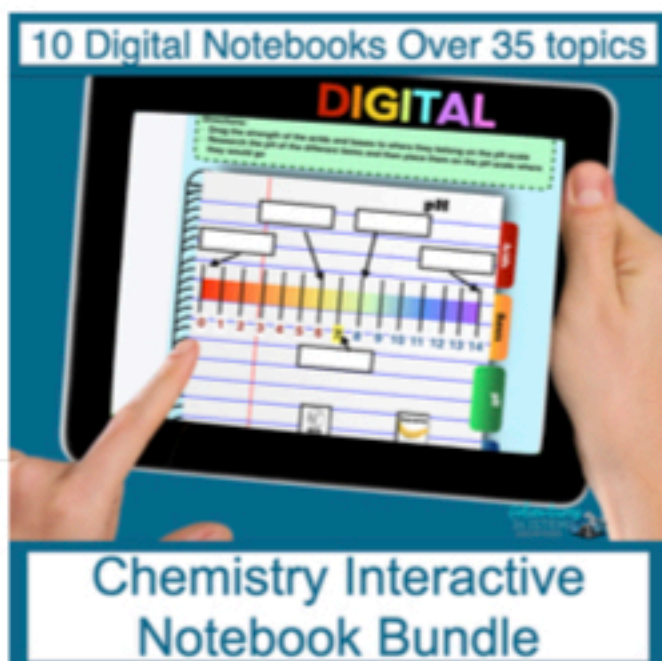




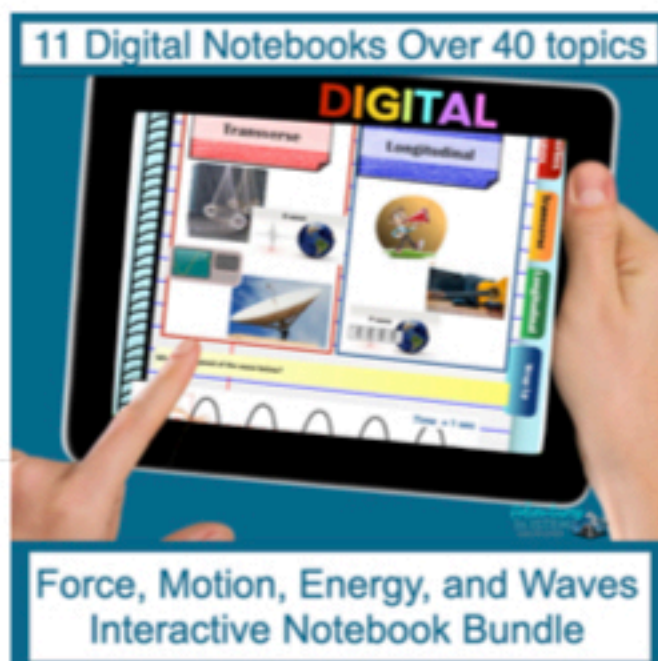
# Save Money and Grab a Bundle



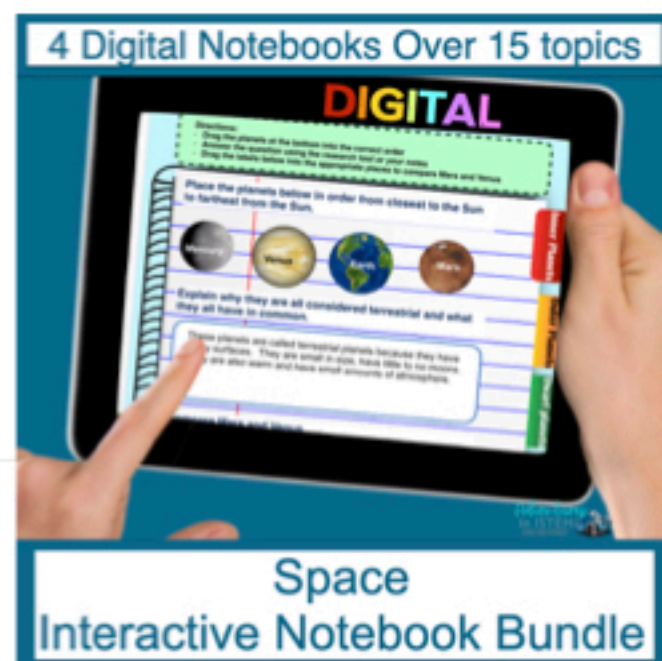
Years worth of digital notebooks covering over 100 physical science topics.



10 digital notebooks covering over 35 chemistry topics.



11 digital notebooks covering over 35 physics topics.



4 digital notebooks covering over 35 space topics.





# Teaching STEM Through Inquiry

## Thank You

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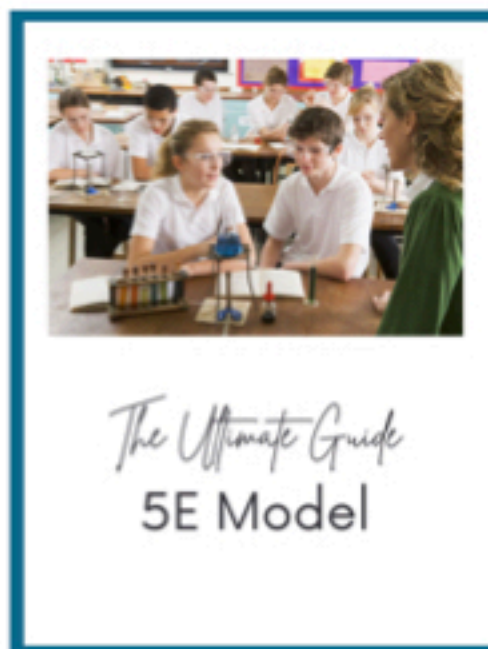
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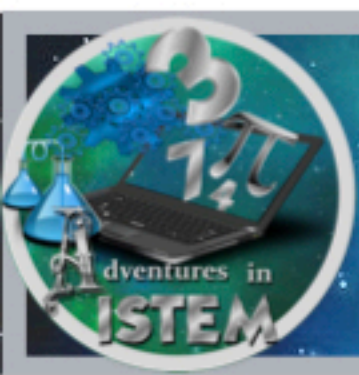
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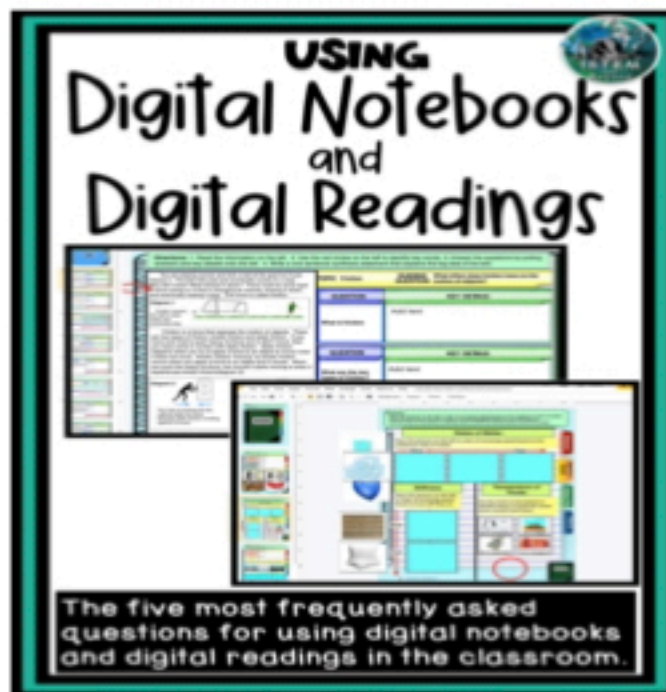




# Digital Resources

## Using Digital Products?

If you are new to using digital lessons than I recommend to check out my blog post that contains the most frequently asked questions. Click the picture for the link.



I would also recommend checking out my Google Slide videos that demonstrate how to drag and drop pieces, write in the text boxes, add objects, and more. These are short videos that can easily be shared with students and parents. Click the picture for the link

