

What matters is how kids can make connections, their thinking, and their discussions.

# Weekly Think Along Plan

<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<p><b>Explore It (problem/text/ stimulus)</b></p> <p>[Given problem/text/ stimuli]</p> <ul style="list-style-type: none"><li>● What is this about?</li><li>● How would you start?</li></ul>	<p><b>Talk About It</b></p> <p>[Given the content]</p> <ul style="list-style-type: none"><li>● What do you know about the content?</li><li>● What information is important?</li></ul>	<p><b>Work It Out</b></p> <ul style="list-style-type: none"><li>● Explain your answer in more than one way</li><li>● What mistakes do we need to avoid?</li></ul>	<p><b>Change It</b></p> <p>[Given a different assessment item]</p> <ul style="list-style-type: none"><li>● How will this item help me?<ul style="list-style-type: none"><li>○ Answer another item</li><li>○ Connect with other content</li></ul></li><li>● If [something] changed, how would that change the answer?</li></ul>	<p><b>Reflect on It</b></p> <ul style="list-style-type: none"><li>● What are you more confident about?<ul style="list-style-type: none"><li>○ Getting started</li><li>○ Understanding the content</li><li>○ Solving and explaining</li></ul></li><li>● Do we still need to work on this?</li></ul>

# Monday - Undercover Agent

**What kind of science problem is this?**

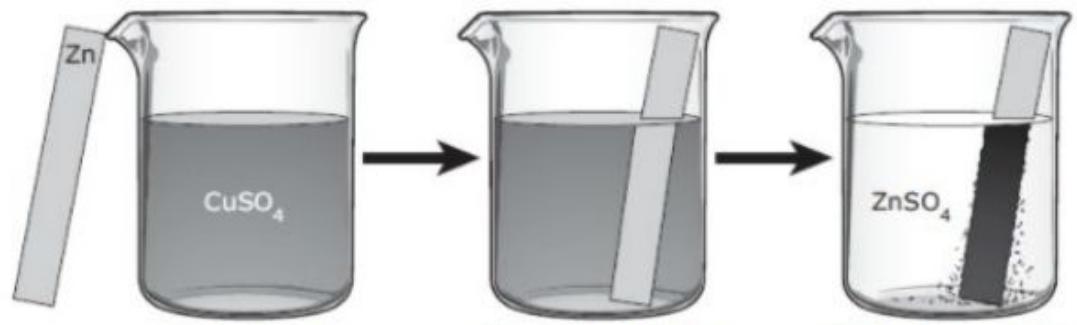

Monday

What is this about?

How would you start answering this question?

For an investigation a student poured a blue solution of  $\text{CuSO}_4$  into a beaker. The student placed a shiny, silver-colored strip of zinc metal in the solution and observed the changes.

Observations of an Investigation



Blue solution      Zinc in blue solution      Zinc in clear solution

The student inferred that a chemical reaction occurred. What evidence supports this inference?

## Tuesday- Fact or Fib Showdown

Bubbles, expected color change, smell, a precipitate forming, and energy in the form of heat/light are all evidence that a chemical change has occurred.

**FIB**

$\text{CuSO}_4$  contains 1 copper atom, 1 sulfur atom, and 4 oxygen atoms.

**FACT**

Chemical changes can be reversed but physical changes are permanent.

**FIB**

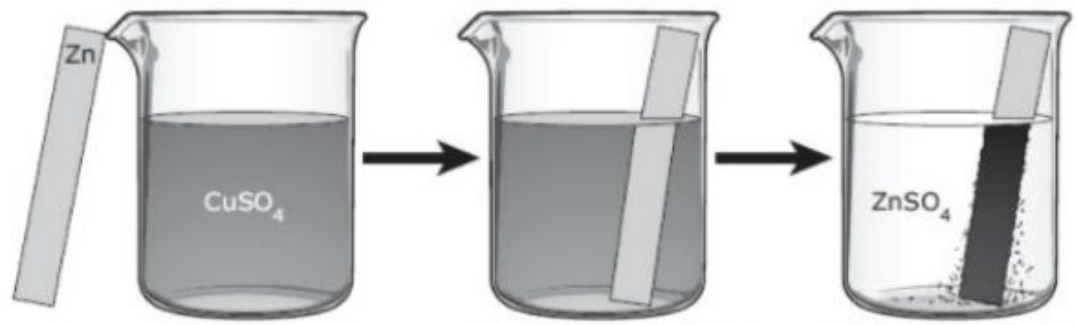
Tuesday

What do you know about the content?

What information is important?

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Observations of an Investigation



Blue solution      Zinc in blue solution      Zinc in clear solution

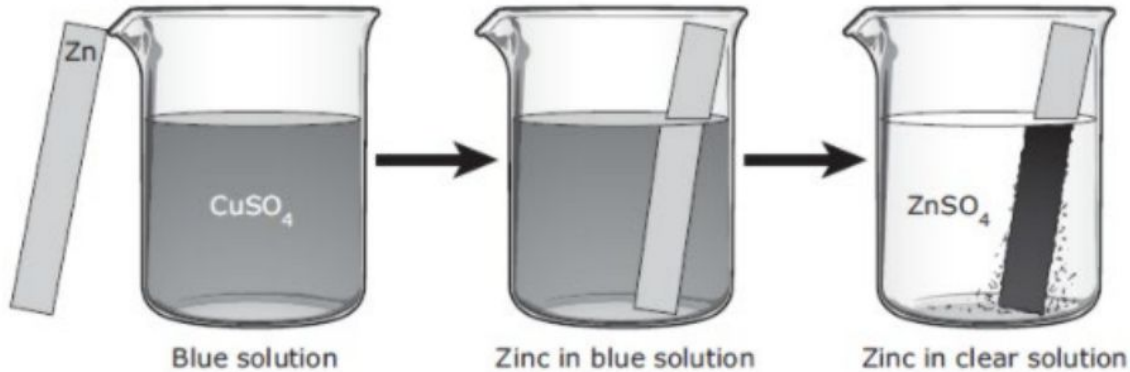
The student inferred that a chemical reaction occurred. What evidence supports this inference?

# Round 1 Worst Answer

## Wednesday - IQ Slapdown

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Observations of an Investigation



The student inferred that a chemical reaction occurred. What evidence supports this inference?

F. A dark solid formed on the zinc metal

G. The zinc metal remained silver-colored and shiny

H. The  $\text{CuSO}_4$  solution turned blue when the zinc metal was added.

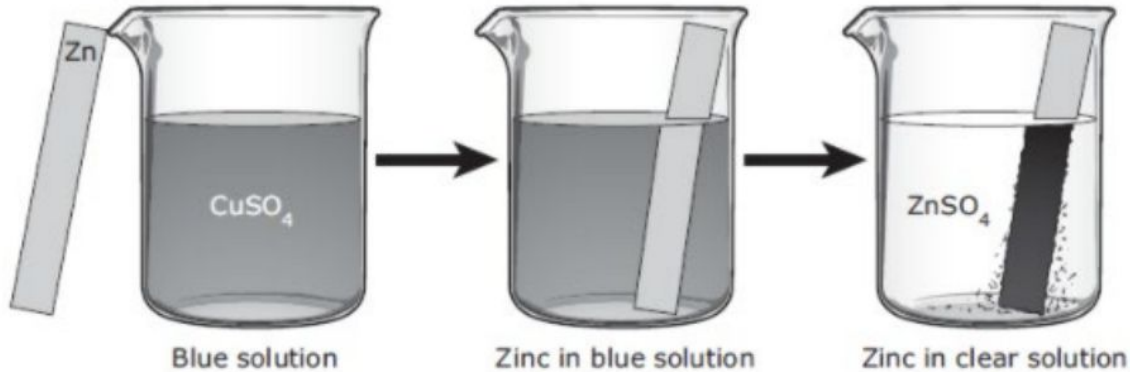
J. None of these

# Round 2 Best Distractor

## Wednesday - IQ Slapdown

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Observations of an Investigation



The student inferred that a chemical reaction occurred. What evidence supports this inference?

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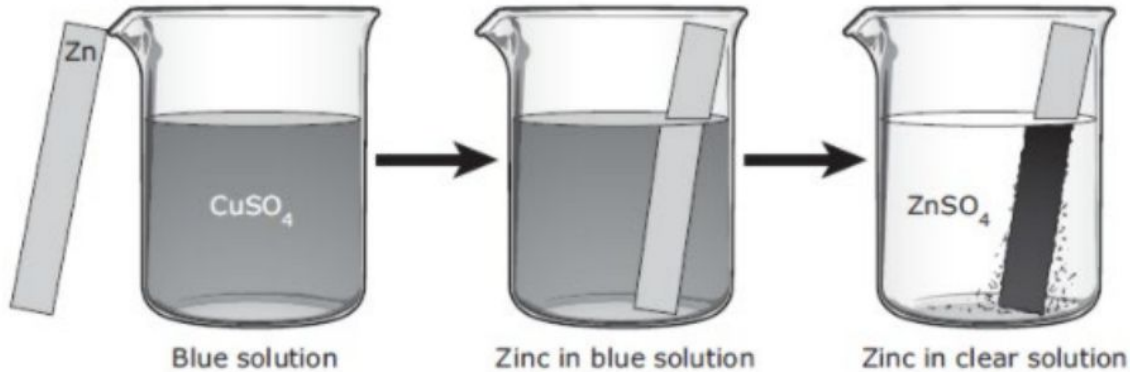
J. None of these

# Round 3 Correct Answer

## Wednesday - IQ Slapdown

For an investigation a student poured a blue solution of  $\text{CuSO}_4$  into a beaker. The student placed a shiny, silver-colored strip of zinc metal in the solution and observed the changes.

Observations of an Investigation



The student inferred that a chemical reaction occurred. What evidence supports this inference?

F. A dark solid formed on the zinc metal

G. The zinc metal remained silver-colored and shiny

H. The  $\text{CuSO}_4$  solution turned blue when the zinc metal was added.

J. None of these

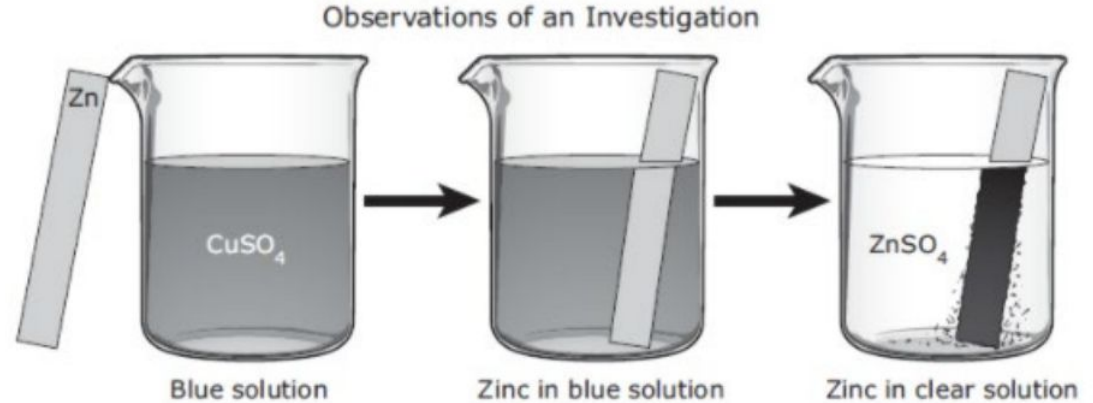


Wednesday

Explain your answer.

What is one mistake we need to avoid?

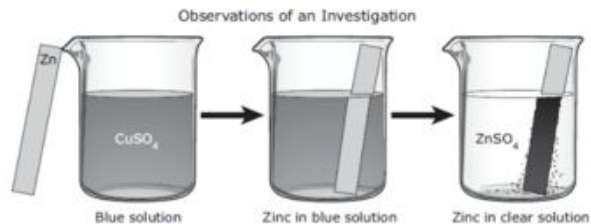
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- J** None of these

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Some students in a chemistry lab conducted an investigation in which they added four different solid substances to separate beakers of water. They stirred the mixtures for one minute and then recorded their observations in the table below.

Student Observations

Substance	Observation
1	The substance dissolved.
2	The substance caused bubbles to form.
3	The substance sank to the bottom.
4	The substance floated on top.

Which substance most likely caused a new substance to be formed when mixed with water?

- F Substance 1
- G Substance 2
- H Substance 3
- J Substance 4

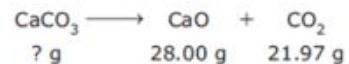
## Thursday- Odd One Out

A silver ring reacts with compounds containing sulfur in the air to form silver sulfide, a black substance that makes up the tarnish on the surface of silver objects. To remove the tarnish from the ring, students placed it in a pan lined with aluminum foil and added hot water. Baking soda was added to the hot water and stirred. Students made observations about the process.

Which observation of this process provides evidence of a chemical reaction?

- F Hot water heated the aluminum foil.
- G The liquid solution changed color.
- H The pan was lined with aluminum foil.
- J The hot water cooled.

A chemical reaction in which calcium carbonate,  $\text{CaCO}_3$ , is decomposed results in the production of two simpler compounds.

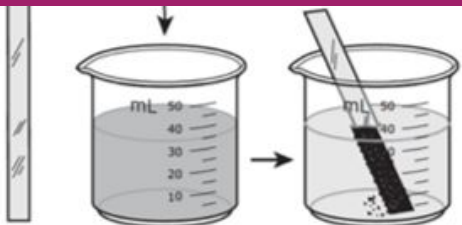


What mass of calcium carbonate, to the nearest hundredth of a gram, is decomposed in this reaction?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

# Thursday- Odd One Out

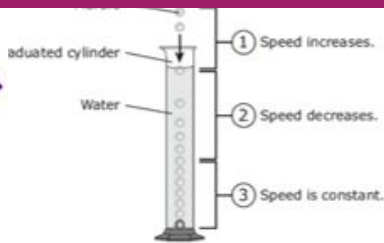
## graphic of chemical reaction



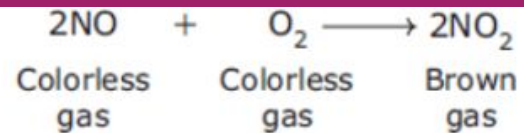
## description of chemical reaction

- The solution is lighter in color.
- The volume of solution is the same.
- The metal strip is shiny above the surface of the solution.
- The metal strip is not shiny below the surface of the solution.
- The metal strip below the surface of the solution has a dark coat of flaky material.
- When the metal strip is touched, the flaky material falls off.

## graphic of force



## formula of chemical reaction



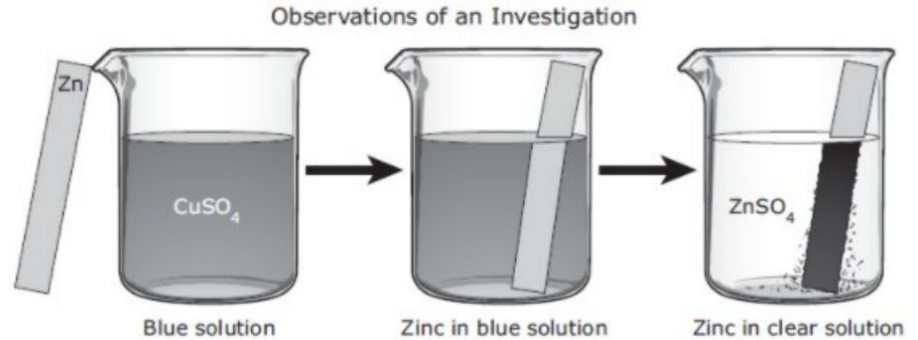
# Thursday

## How will this question help me?

- This will help me answer another test question by/because...
- This connects with...

If the 3rd beaker did not contain the dark solid, how would that change the answer?

For an investigation a student poured a blue solution of  $\text{CuSO}_4$  into a beaker. The student placed a shiny, silver-colored strip of zinc metal in the solution and observed the changes.



The student inferred that a chemical reaction occurred. What evidence supports this inference?

- F** A dark solid formed on the zinc metal.
- G** The zinc metal remained silver-colored and shiny.
- H** The  $\text{CuSO}_4$  solution turned blue when the zinc metal was added.
- J** None of these

Friday

# 3-2-1 Summary

evidence of learning strategy playlist



## 3-2-1 Summary

**PURPOSE – Evidence of Learning:** Summarize learning and think deeply about content.

### Step-by-Step Instructions

1. Students write 3 things they learned.
2. Students write 2 examples, applications, or inferences about what they learned.
3. Students write 1 question or draw 1 conclusion about what they learned.
4. Students turn in their **3-2-1 Summaries** as an exit ticket.
5. Teacher evaluates students' **3-2-1 Summary** responses and clarifies/verifies as appropriate.

**Helpful Hints:**  safety  classroom mgmt  differentiation

-  Model a 3-2-1 summary over a different topic so students have an exemplar.
-  Provide students with an idea bank for each section; allow student to dictate responses to a scribe; provide thinking stems to frame responses.

#### Materials:

- Optional: **3-2-1 Summary** handout projected, notebook paper

### Think It Up

*choose a Think It Up question as an exit ticket or a journal entry as evidence of learning*

- Share your **summary** with another student and add one new idea to any section.
- Get a partner and **apply** what you know to help answer each other's 1 question.

# Friday

## 3 Things I Learned

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- 
- 

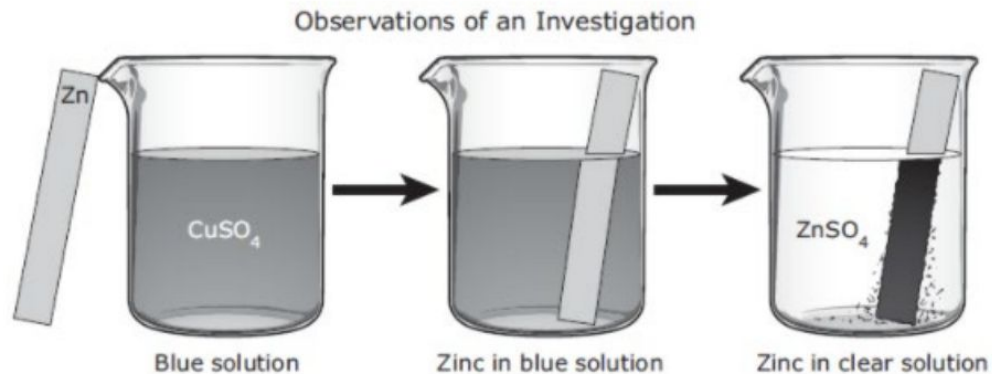
## 2 Examples, Applications, or Inferences About What I Learned

- 
- 

## 1 Question or Draw 1 Conclusion About What I Learned

- 

For an investigation a student poured a blue solution of  $\text{CuSO}_4$  into a beaker. The student placed a shiny, silver-colored strip of zinc metal in the solution and observed the changes.



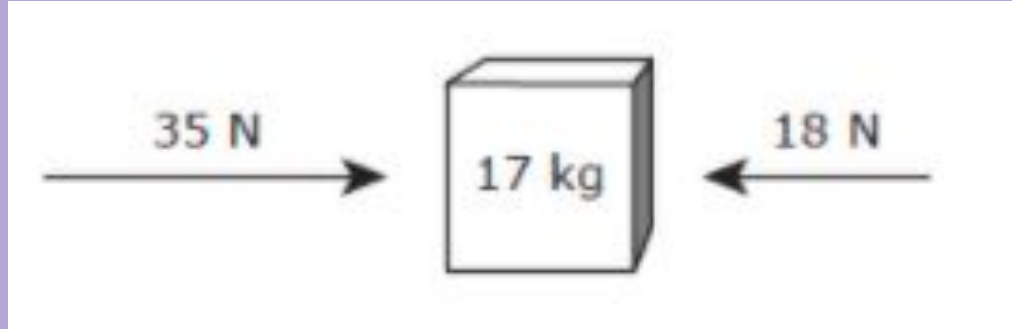
The student inferred that a chemical reaction occurred. What evidence supports this inference?

- F** A dark solid formed on the zinc metal.
- G** The zinc metal remained silver-colored and shiny.
- H** The  $\text{CuSO}_4$  solution turned blue when the zinc metal was added.
- J** None of these



# Monday - Just the Facts

1. Look at the diagram.
2. Write down 3 facts you know just by looking at the diagram.
3. Switch facts with a partner.
4. Choose one of your partner's facts
5. Complete one of the sentences below based on ONE of your partner's fact:
  - ***Based on this information, I can conclude that...***
  - ***I can conclude that \_\_\_\_\_ will happen. I know this because...***





Monday

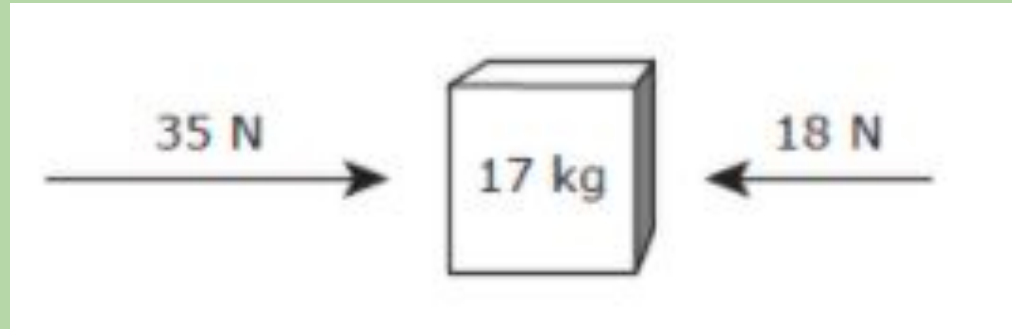
Fact 1:

Fact 2:

Fact 3:

Based on my partner's fact:

- *Based on this information, I can conclude that...*
- *I can conclude that \_\_\_\_\_ will happen. I know this because...*



## Tuesday- Pick Up the Slip Up

**A:** Acceleration includes an object slowing down or changing direction.

**B:** Acceleration is only an increase in speed.

**C:** Constant speed is a result of balanced forces and no acceleration.

**B**

**A:** Speed has no direction.

**B:** Acceleration occurs when forces are unbalanced.

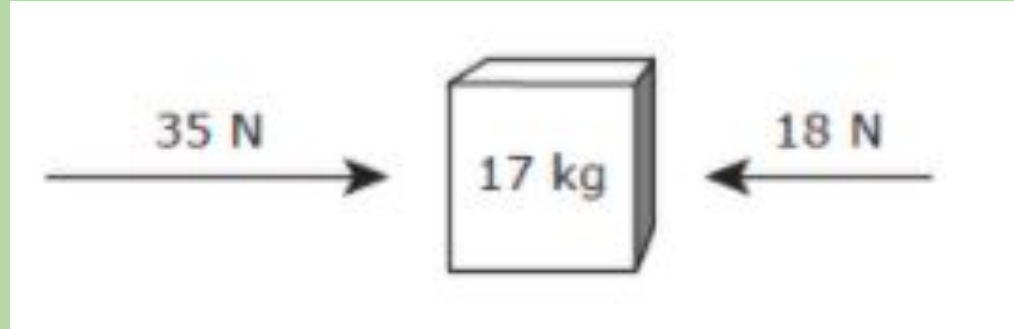
**C:** We calculate acceleration by multiplying force x mass.

**C**

Tuesday

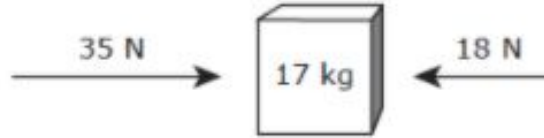
What do you know  
about the content?

What information is  
important?



## Wednesday - Make the Case

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



Which statement best describes the acceleration of the box?

1. Organize students into groups of 4 and assign each a letter A-B-C-D.
2. Give students a multiple choice questions.
3. Students get together with their letter group in different areas of the room to determine if their answer choice is...
  - Correct or “innocent” by explaining why it is the correct response OR
  - Incorrect or “guilty” by explaining why their answer is the incorrect response
4. Students then share out to “make their case”
5. Students deliberate and come to consensus about which answer is innocent (correct)

## Wednesday - Group A

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



Which statement best describes the acceleration of the box?

- A** The box accelerates at  $1.0 \text{ m/s}^2$  to the right because the net force is 17 N to the right.

## Wednesday - Group B

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



Which statement best describes the acceleration of the box?

**B** The box accelerates at  $1.9 \text{ m/s}^2$  to the right because the greater force is to the right.

## Wednesday - Group C

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



Which statement best describes the acceleration of the box?

**C** The box accelerates at  $3.0 \text{ m/s}^2$  because the combined forces cause the box to accelerate.

## Wednesday - Group D

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



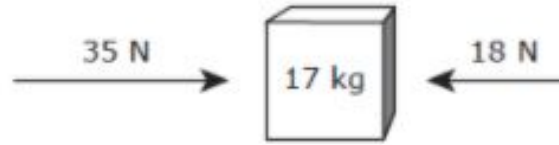
Which statement best describes the acceleration of the box?

- D** The box does not accelerate, because neither force is large enough to move the box.



Wednesday

Two forces are applied to a 17 kg box, as shown. The box is on a smooth surface.



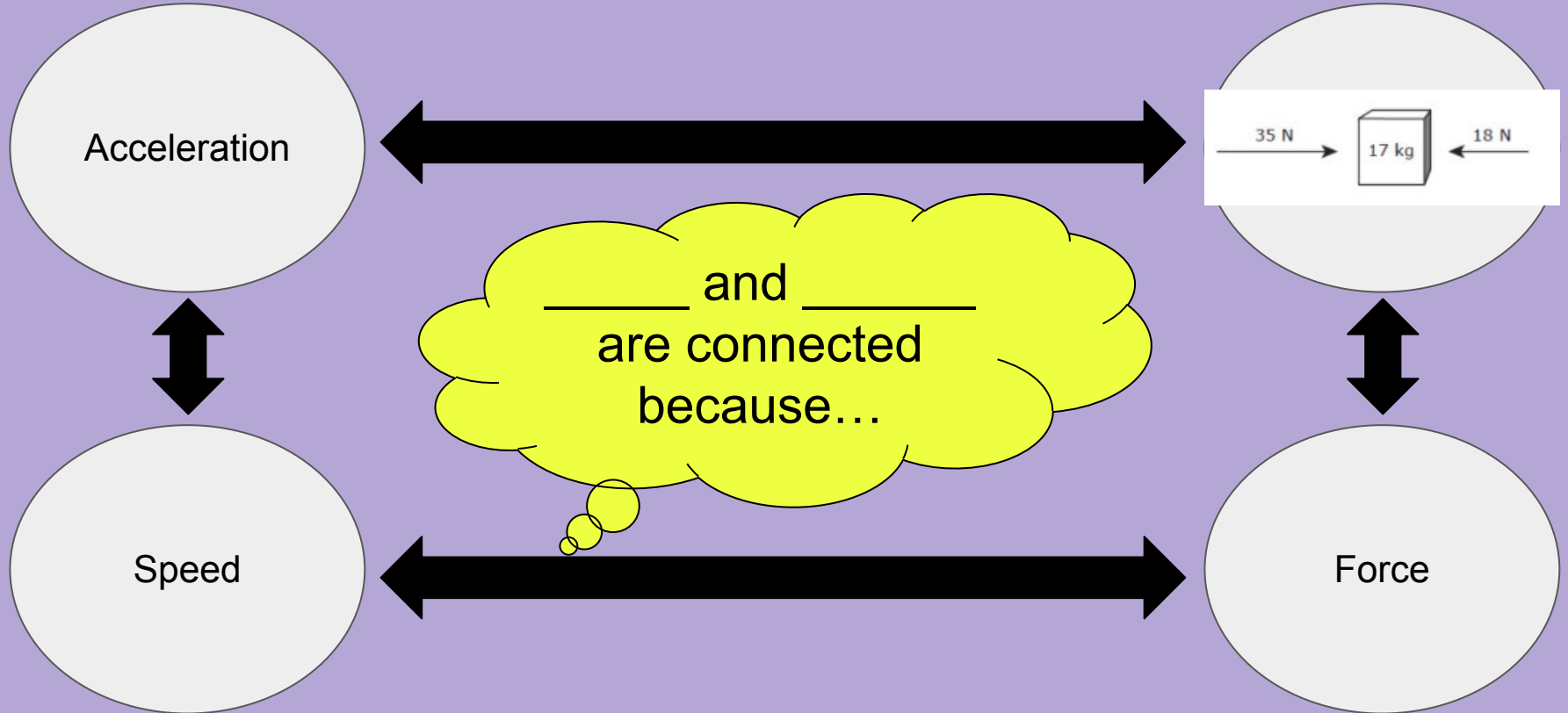
Which statement best describes the acceleration of the box?

- A The box accelerates at  $1.0 \text{ m/s}^2$  to the right because the net force is 17 N to the right.
- B The box accelerates at  $1.9 \text{ m/s}^2$  to the right because the greater force is to the right.
- C The box accelerates at  $3.0 \text{ m/s}^2$  because the combined forces cause the box to accelerate.
- D The box does not accelerate, because neither force is large enough to move the box.

Explain the correct answer.

What is one mistake we need to avoid?

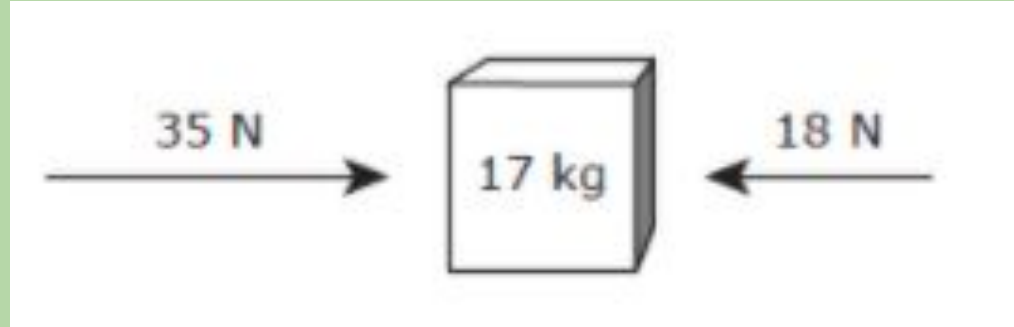
# Thursday - Connect the Dots



# Thursday

- \_\_\_\_\_ and \_\_\_\_\_ are connected because...

If the force to the left changes to 40 N, how would that change the answer?



# Friday - Tabletop Tweet

1. Using 140 characters or less, students describe what they learned.
2. Students then summarize what they learned with a hashtag phrase.
3. Students trade tweets.
4. Students get the new tweet and add one more idea in the “re-tweet” box.

evidence of learning strategy playlist




## Tabletop Tweet

**PURPOSE – Evidence of Learning:** Communicate your understanding of content by describing, sketching, and summarizing what you learned.

### Step-by-Step Instructions

1. Using 140 characters or less, students describe what they learned.
2. Students then create a graphic, diagram, or quick sketch to capture the big idea.
3. Students then summarize what they learned with a hashtag phrase.
4. Students crush their tweet and toss it across the room.
5. Students pick up a random tweet and add one more idea in the re-tweet box.
6. Teacher sees and hears students’ thinking and adjusts instruction as appropriate.

**Helpful Hints:**  safety  classroom mgmt  differentiation

-  Hand sanitize before and after participating.
-  Role play the appropriate way to crush and throw the tabletop tweet.
-  Allow student to process the task with a supportive peer/adult; provide student an idea/word bank; allow student to dictate ideas to a scribe.

### Materials:

- **Tabletop Tweet** handout (printed or projected); notebook paper

### Think It Up

*choose a Think It Up question as an exit ticket or a journal entry as evidence of learning*

- **Compare/contrast** the tabletop tweet to a real tweet. What changes would you make if this was a REAL tweet?

# Friday

**My Tweet:**

**My Hashtag:**

**Partner's Tweet:**

**Re-tweet:**

