

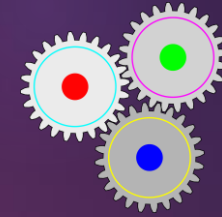


3-2-1: It's More Than You Know

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3-2-1: How it Works



- ▶ Watch the video and write...
 - ▶ 3 things that you **learned**,
 - ▶ 2 things that you **found interesting**, and
 - ▶ 1 thing you still have **a question about**.

Rationale for Use



- ▶ Aids in **student reflection** by providing a structure for students to summarize, organize and integrate what they learned.
- ▶ Gives students prompts **to jump start the process of reflecting.**
- ▶ A formative assessment that
 - ▶ **Engages** students and assesses learning.
 - ▶ Helps **hold students accountable** for completing an assignment that provides additional resources for learning.
 - ▶ Allows a way for students to **demonstrate how the information fits into their knowledge**, that can be easily assessed by the instructor.
 - ▶ It gives the instructor the opportunity to **identify areas that need re-teaching**, as well as areas of student interest.

Benefits of 3-2-1



- ▶ **Embeds reflective learning practices**
 - ▶ Actively **analyzing experiences**, in order to help your students improve and develop.
 - ▶ Helps **develop the critical, constructive, and creative thinking** that is necessary for reflective practice.
- ▶ **Gives immediate feedback on what students are learning.**
 - ▶ Allows the instructor an opportunity to look for **patterns related to students' understanding** of the course material.

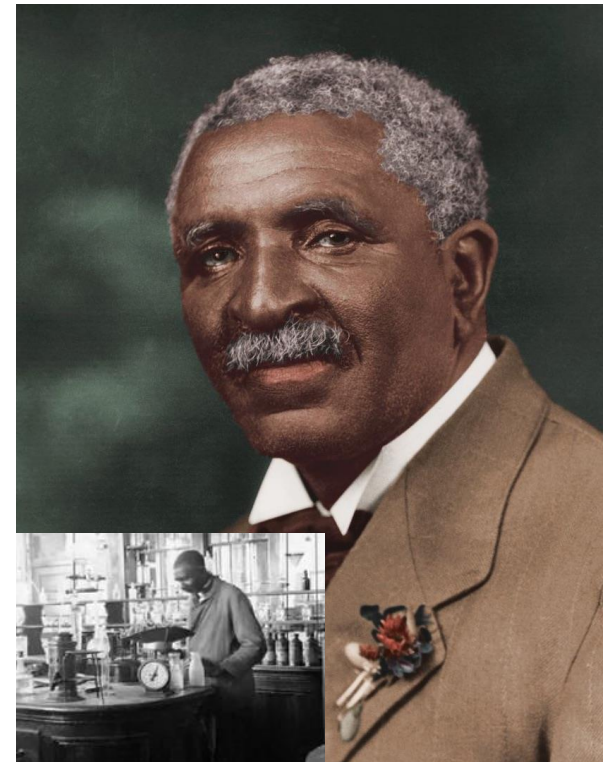
Benefits of 3-2-1 cont.



- ▶ **Helps student establish a purpose for learning.**
 - ▶ When students know that they will be writing a summary, they are **more likely to engage**.
- ▶ **The strategy may be used to promote reflective dialogue by small groups of students.**
 - ▶ Form small groups of students who share their 3-2-1s with each other. Students may add the thoughts shared by peers to their own 3-2-1s.

BIOL 3362 - Economic Botany, Example Assignment:

- ▶ **Modern Marvels: Carver Tech, a Video on George Washington Carver**
 - ▶ George Washington Carver was a slave set free with a microscope and a vision: this is his story.
 - ▶ He introduced the lowly peanut to big business and changed the course of Southern agriculture.
 - ▶ He turned soybeans into plastic and carved his place in history as one of the 20th century's greatest scientists



Student 1



▶ 3 Things I've Learned

- ▶ I learned that George Washington Carver was born into slavery.
- ▶ I learned that George Washington Carver was a professor of Horticulture.
- ▶ I learned that soy oil, made from peanuts, is being used in biodiesel technologies.

▶ 2 Things I Found Interesting

- ▶ I thought it was interesting that there are approximately 50,000 peanut farms in the United States.
- ▶ I found it interesting that peanut oil was originally marketed as a massage oil.

▶ 1 Thing I Have a Question About

- ▶ I was curious about the efforts to grow sweet potatoes hydroponically in space.

Student 2



▶ Three (3) Things I Learned:

- ▶ First, I learned that when George Washington Carver was an infant, he and his mother Mary were stolen from the Carver farm. His mother was never found, but baby Carver was returned to the farm. To[o] frail to work in the fields, Carver was raised inside the Carver household, which gave him free time to be one with nature and ponder many questions about it.
- ▶ Second, I learned that Carver was both the first African American student to attend Iowa State for horticulture, and, after he graduated, was then Iowa State's first African American Professor.
- ▶ Third, I learned that in 1937, Henry Ford invited George Washington Carver to participate in a scientific conference in Dearborn, Michigan. **Ford was a major player in the chemurgy movement and one of his ongoing research projects focused on the concept of using soybeans to make plastic for car parts.** Carver consulted with Ford and helped him produce a car that was made with a bushel of soybeans in its construction in the year 1942.

Student 2 cont.



▶ Two (2) Things I Found Interesting:

- ▶ First, I found it interesting and ironic that former slave George Washington Carver revitalized agriculture for the southern states with his research regarding the legume plants. With the South's distaste and deeply rooted beliefs of slavery and African Americans being lesser people, ***I think it's interesting that a former slave was the salvation for agriculture in the south. Carver was innovative and brilliant with his research in adding nitrogen back into the soil, and without his findings, agriculture in the south surely would have failed.***
- ▶ Second, ***I found it interesting how popular peanut oil became for massage use. People would come to the Tuskegee Institute to receive peanut oil massages and would also write Carver to try and purchase peanut oil.*** It became a popular relief for those with muscle disorders or those effected by Polio. It was so influential that in 1942, President Franklin Delano Roosevelt made an official visit to the university to receive a treatment for his infantile paralysis.

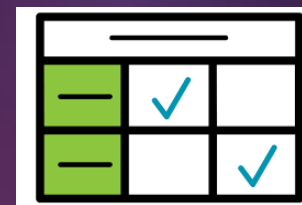
Student 2 cont.



▶ One (1) Thing I Still Question:

- ▶ Soybeans have the potential to replace their petroleum counterparts in various plastic industries. ***Is there a reason why soybeans haven't become a more common plastic alternative? Are soybean plastic products recyclable and biodegradable in ways fossil fuel plastics are not?***

Rubric for assessment



Criteria	Exceptional	Good	Fair	Poor	Didn't Do
Things you learned	<i>5 points</i> Exceptionally well presented; contains all three things you learned in sufficient detail.	<i>3.5 points</i> Well presented; contains three things you learned but lacks sufficient detail.	<i>2 points</i> Presented adequately but is missing one of the three things you learned and/or lacks sufficient detail.	<i>1 point</i> Presented adequately but is missing two of the three things you learned and/or lacks sufficient detail.	<i>0 points</i> Did not do
Things you found interesting	<i>5 points</i> Exceptionally well presented; contains the two things you found interesting in sufficient detail.	<i>3.5 points</i> Well presented; contains the two things you found interesting but lacked sufficient detail.	<i>2 points</i> Presented adequately but is missing one of the two things you found interesting	<i>1 point</i> Presented adequately but is missing one of the two things you found interesting and lacks sufficient detail.	<i>0 points</i> Did not do
Things you still have a question about.	<i>4 points</i> Exceptionally well presented; contains the one thing you still have a question about in sufficient detail. Question is obviously based on critical analysis of information given.	<i>3 points</i> Well presented; contains the one thing you still have a question about but lacks sufficient detail. Question appears to be based on critical analysis of information given.	<i>1 point</i> Statement made but unanswered question was easily formulated about a factual statement and did not involve critical analysis.	<i>1 point</i> Statement made but no unanswered question was given.	<i>0 points</i> Did not do
Style	<i>4 points</i> Use complete sentences that are clear and varied in pattern, from simple to complex, with excellent use of punctuation. Clearly indicated/labeled the 3-2-1 categories.	<i>3 points</i> Uses complete sentences that are clear but may lack variation; a few may be awkward and there may be a few punctuation error. Indicated/labeled the 3-2-1 categories but could have been done more clearly.	<i>2 points</i> Does not use complete sentence or awkward wording is common or punctuation errors are numerous. Indicated/labeled two of the 3-2-1 categories.	<i>1 point</i> Sentences are clear but may lack variation; most sentences are awkward and there are numerous punctuation errors Did not indicate/label the 3-2-1 categories	<i>0 points</i> Did not do
Format	<i>2 points</i> Presented in Word format and contains title and student's name.	<i>1.5 point</i> Presented in Word format but lacks title or student name.	<i>1 point</i> Presented in Word format but lacks title and student name.	<i>0.5 point</i> Not presented in Word.	<i>0 points</i> Did not do
25 points maximum, Comments:					

Additional Video Titles

- ▶ What is a fruit? Why are tomatoes both a fruit and a vegetable?
- ▶ Agricultural Revolution
- ▶ Modern Marvel: Wheat
- ▶ Modern Marvels: The Potato
- ▶ Guatemala: The Human Price of Coffee
- ▶ Chinese Herbs and Herbal Prescriptions
- ▶ Henbane: The Witches Brew? Sacred Weeds
- ▶ Poison: A History of Toxic Cures-Pain, Pus, and Poison
- ▶ The Magic of Mushrooms

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