

Changes to the *Motion and Design* STC® Assessment Guide



Since publication of the *Motion and Design* STC® Assessment Guide, corrections have been made to the information found in the guide.

This errata set includes the following:

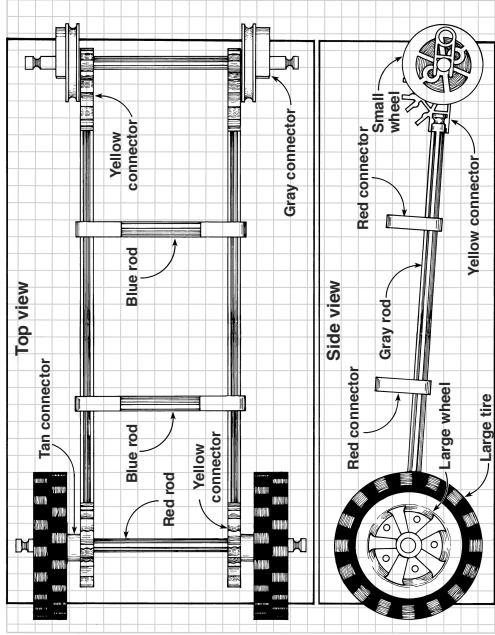
Formative Assessment	Revised Question 4.1
Summative Assessment	Revised questions 17 and 18
Summative Assessment Answer Key, Question 17	The correct response is: A
Summative Assessment Answer Key, Question 18	The correct response is: B

Photocopy and distribute these replacement pages as needed.

If you have questions about these changes or about the module in general, call Carolina's product information staff at 800-227-1150 (8 a.m.–5 p.m. ET, M–F), or email stc@carolina.com.

QUESTION 4.1

Name _____ Date _____



Use the two-view drawing and the chart above to determine the total number of pieces used and the total cost to build the standard vehicle. Enter the information below.

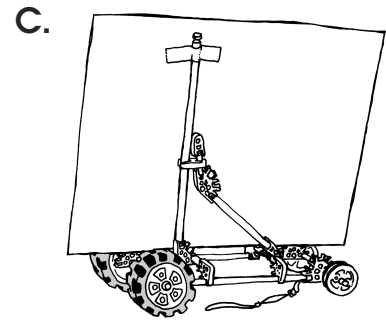
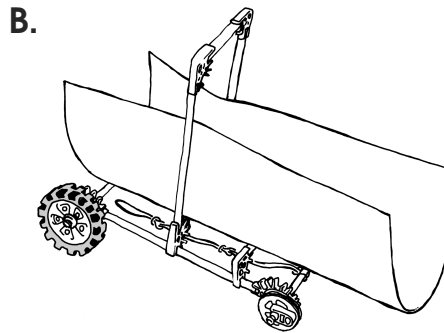
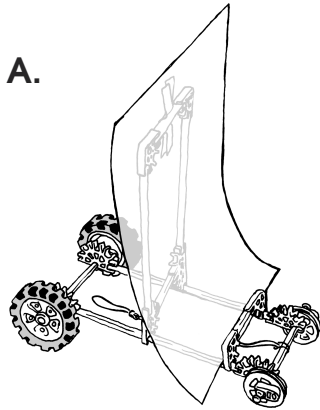
Building Piece	Cost Per Piece	Number of Pieces Used		Total Cost
Propeller	\$500	x	=	
Rods				
Gray	\$450	x	=	
Red	\$400	x	=	
Yellow	\$350	x	=	
White	\$300	x	=	
Blue	\$250	x	=	
Green	\$100	x	=	
Connectors				
White	\$250	x	=	
Yellow	\$150	x	=	
Green	\$150	x	=	
Red	\$100	x	=	
Orange	\$100	x	=	
Gray	\$100	x	=	
Tan	\$100	x	=	
Wheels				
Small	\$200	x	=	
Large	\$400	x	=	
Tires				
Small	\$100	x	=	
Large	\$200	x	=	
		TOTAL		

Total number of parts: _____ Total cost of the vehicle: \$ _____

Technological designs and products may be evaluated in terms of their cost, as well as their scientific and technological efficiency.

DISCUSSION

14. Which vehicle in these three drawings would probably experience the greatest air resistance?



15. What is the result of more air resistance?

- A.** A faster-moving vehicle
- B.** A slower-moving vehicle
- C.** A stopped vehicle
- D.** A moving vehicle

16. There are two blank spaces in the sentence below.

The terms “kinetic” and “potential” will complete the sentence.
Choose the pair of words below that are in the correct order.

- A.** Kinetic then potential
- B.** Potential then kinetic

_____ energy is energy of motion while _____ energy is energy that is stored and waiting to be used.

- 17.** Your design team has created a new vehicle. The cost of all of the parts has been calculated at \$7700. Your team continued to brainstorm how to improve the design and decided to make changes. Before you made any changes, your vehicle had 4 small wheels and no tires on it.

Your team decided to add tires to the 2 small front wheels that were already there.

You also decided to remove the 2 small rear wheels and replace them with 2 large wheels and 2 large tires.

Remember that you have removed a couple things (reduced your cost some) and added a few things (increased your cost some). Use the Evaluating the Cost of Our Design table to help you calculate the cost of your new vehicle. Circle the letter of the new cost below.

- A.** \$8700
- B.** \$7500
- C.** \$7900
- D.** \$8300

Evaluating the Cost of Our Design

Building Piece	Cost Per Piece	Number of Pieces Used		Total Cost
Propeller	\$500	x	=	
Rods				
Gray	\$450	x	=	
Red	\$400	x	=	
Yellow	\$350	x	=	
White	\$300	x	=	
Blue	\$250	x	=	
Green	\$100	x	=	
Connectors				
White	\$250	x	=	
Yellow	\$150	x	=	
Green	\$150	x	=	
Red	\$100	x	=	
Orange	\$100	x	=	
Gray	\$100	x	=	
Tan	\$100	x	=	
Wheels				
Small	\$200	x	=	
Large	\$400	x	=	
Tires				
Small	\$100	x	=	
Large	\$200	x	=	
TOTAL				

- 18.** Addie's design team created a cost-effective vehicle. Which best describes their goal?
- A.** cut costs no matter what
 - B.** make the best vehicle for the least amount of money
 - C.** reduce safety to create a cheaper vehicle
 - D.** spend whatever it takes for the best in performance

Summative Assessment Answer Key

1. B

2. B

3. C

4. C

5. B

6. D

7. B

8. C

9. C

10. A

11. A

12. D

13. D

14. A

15. B

16. A

17. A

18. B