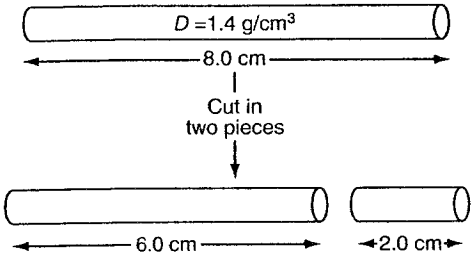
PS1 (5–8) INQ-1 Students will investigate the relationships among mass, volume, and density.

1 The table below shows characteristics of a solid, cylindrical rod.

Characteristics of Cylindrical Rod

Mass (g)	Volume (cm^3)	Density (g/cm^3)
14.0	10.0	1.4

The rod is cut into two pieces, as shown in the diagram below.

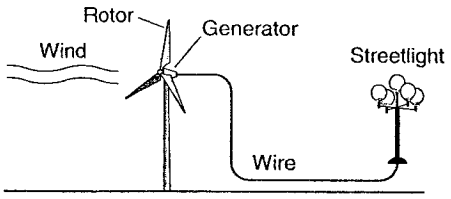


What is the density of the piece of the rod that is 2.0 cm long?

A. 0.7 g/cm^3
B. 1.4 g/cm^3
C. 2.0 g/cm^3
D. 2.8 g/cm^3

PS2 (5–8) SAE-6 Students will, given a real-world example, show that within a system, energy transfers from one form to another (i.e., chemical, heat, electrical, gravitational, light, sound, mechanical).

2 The diagram below shows a windmill system.



Which part of the system directly changes mechanical energy to electrical energy?

A. rotor
B. generator
C. wire
D. streetlight

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Spring 2011 - Grade 08 NECAP Tests

Grade 08 Students in 2010-2011

Item Analysis Report - Science

School: Demonstration School 1
District: Demonstration District A
State: Rhode Island
Code: DA-DEMO1

Name/Student ID		Released Items										Total Test Results						
	Item Number	1	2	3	4	5	6	7	8	9	10	Domain Points Earned				Total Points Earned	Scaled Score	Achievement Level
	Science Domain	PS	PS	PS	ESS	ESS	ESS	LS	LS	LS	LS	Physical Science	Earth Space Science	Life Science	Inquiry			
	Assessment Target	1-1	2-6	3-8	1-2	1-4	2-8	1-2	4-10	4-11	1-1							
	Depth of Knowledge Code	2	2	2	2	2	2	2	1	2	3							
	Item Type	MC	MC	MC	MC	MC	MC	MC	MC	MC	CR							
	Correct MC Response	B	B	D	A	C	C	C	A	C								
	Total Possible Points	1	1	1	1	1	1	1	1	1	4	15	15	15	18	63		
Amadoflores, Kelly	D082000077	A	+	+	+	+	+	+	+	+	4	7	13	15	16	51	850	3
Anderson, James L	D082000048	C	+	+	+	+	+	+	+	+	2	6	8	10	11	35	837	2
Broadbrooks, Ryan O	D082000062	A	+	B	B	+	+	+	+	+	4	6	12	14	10	42	842	3
Broadhead, Benjamin L	D082000065	A	+	+	C	D	B	B	B	B	1	5	5	5	5	20	825	1
Brown, Mika A	D082000075	+	+	A	D	D	+	+	+	+	2	8	8	13	12	41	841	3
Brown, Morgan M	D082000024											0	0	0	4	4	800	1
Buchholz, Kyle A	D082000054	A	+	B	C	A	+	A	D	+	0	3	3	2	1	9	809	1
Caffrey, Peter A	D082000073	A	A	A	B	D	D	D	C	A		1	2	2	0	5	800	1
Campos, Kelby	D082000034	A	+	+	B	B	+	+	+	+	3	9	6	12	11	38	839	2
Carpenter, Aren W	D082000031	A	+	A	+	A	A	+	+	A	1	4	4	7	4	19	824	1
Castner, Emily R	D082000026											0	0	0	0	0		S
Contreras, Camis P	D082000039	A	+	+	+	+	+	+	+	+	3	11	11	14	4	40	840	3
Cooper, Hannah L	D082000050	+	+	+	+	B	+	+	D	+	3	7	8	7	9	31	834	2
Davis, Briah	D082000001	+	C	+	D	B	+	+	+	+	4	10	10	15	16	51	850	3
Deangelis, Joseph J	D082000019	+	A	+	+	A	D	+	+	A	4	7	11	11	10	39	839	2
Gaona, Jonathan J	D082000079	A	C	+	+	B	D	B	C	+	1	4	4	5	1	14	819	1
Gardiner, Dakota L	D082000012	A	+	+	+	D	+	B	+	+	4	9	8	13	14	44	843	3
Gillespie, Jenna	D082000078	A	+	C	D	A	+	B	+	+	1	8	6	5	7	26	830	2
Glasscock, James	D082000066	A	C	A	D	D	D	A	C	A	0	3	3	3	1	10	812	1
Hathaway, Shane R	D082000081											0	0	0	0	0		N
Howes, Kaia M	D082000072	+	C	C	+	A	+	B	+	A	1	3	7	4	8	22	827	1
Hunt, Wade J	D082000057	C	+	+	+	D	+	+	+	+	1	6	9	7	5	27	831	2
Ibarra, Rosa	D082000011	A	C	C	+	A	D	B	+	A	0	3	5	2	7	17	822	1
Jarrard, Eric G	D082000018	+	+	+	C	+	+	+	+	+	3	9	11	11	14	45	844	3
Jensen, Sage	D082000006	A	+	A	D	D	+	D	D	A	1	4	4	6	3	17	822	1
Jones, Andrew A	D082000028	A	+	+	+	+	A	+	+	A	3	7	8	11	8	34	836	2
Leonard, Ryan		+	+	B	+	D	+	+	+	+	2	5	8	9	9	31	834	2
Lippincott, Kevin A	D082000070	+	+	A	+	+	B	+	B	+	2	8	7	10	10	35	837	2
Meader, Shelby	D082000035	+	C	+	D	A	B	B	+	+	2	5	4	6	6	21	826	1
Methiankit, Jonathan J	D082000056	+	+	+	+	+	+	+	+	+	3	14	13	14	11	52	851	3

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Spring 2011 - Grade 08 NECAP Tests

Grade 08 Students in 2010-2011

Item Analysis Report - Science

School: Demonstration School 1
District: Demonstration District A
State: Rhode Island
Code: DA-DEMO1

		Released Items										Total Test Results						
	Item Number	1	2	3	4	5	6	7	8	9	10	Domain Points Earned				Total Points Earned	Scaled Score	Achievement Level
	Science Domain	PS	PS	PS	ESS	ESS	ESS	LS	LS	LS	LS	Physical Science	Earth Space Science	Life Science	Inquiry			
	Assessment Target	1-1	2-6	3-8	1-2	1-4	2-8	1-2	4-10	4-11	1-1							
	Depth of Knowledge Code	2	2	2	2	2	2	2	1	2	3							
	Item Type	MC	MC	MC	MC	MC	MC	MC	MC	MC	CR							
	Correct MC Response	B	B	D	A	C	C	C	A	C								
Name/Student ID	Total Possible Points	1	1	1	1	1	1	1	1	1	4	15	15	15	18	63		
Peals, Gregory	D082000037											0	0	0	0	0		E
Ramirez, Vanesa M	D082000074	C	C	A	D	A	D	B	C	A	1	0	4	2	1	7	800	1
Rayborn, Jeremy P	D082000038	C	+	+	B	A	B	A	+	B	1	7	4	5	3	19	824	1
Royer, Amanda	D082000061	C	+	A	B	D	+	B	+	A	0	6	4	3	3	16	821	1
Ryan, Jonathan J	D082000052	A	+	C	+	+	+	+	+	A	2	6	6	7	5	24	829	2
Shields, Justin	D082000042	A	+	+	C	B	+	+	D	A	1	11	7	6	6	30	833	2
Speidel, Sydne	D082000053	A	A	B	+	D	B	+	D	B	2	3	3	8	5	19	824	1
Stalsberg, Weston M	D082000014	D	A	+	C	A	+	+	B	D	2	3	6	5	14	28	832	2
Taveras, Dahiana		C	+	+	+	D	+	+	+	A	3	6	10	10	13	39	839	2
Thompson, Joshua L	D082000045	+	+	+	D	+	+	+	+	+	4	14	6	14	8	42	842	3
Tipping, Emily A	D082000049	A	+	+	+	A	+	B	+	+	3	7	10	8	13	38	839	2
Williams, Brandon P	D082000051	A	+	C	C	A	+	A	C	B	0	2	3	3	1	9	809	1

Item Number	1	2	3	4	5	6	7	8	9	10				
Percent Correct/Average Score: Group	28	69	54	49	26	64	56	64	51	1.9	6.1	6.7	7.8	7.4
Percent Correct/Average Score: School	28	69	54	49	26	64	56	64	51	1.9	6.1	6.7	7.8	7.4
Percent Correct/Average Score: District	37	64	57	55	33	64	55	68	52	1.8	6.4	6.9	7.8	7.5
Percent Correct/Average Score: State	40	62	66	54	39	72	60	75	51	1.9	6.8	7.4	8.2	8.4

SCIENCE

Organizing and Presenting Your Data

Directions:

You will work **on your own** to organize and present your data, analyze and use your results, and evaluate the investigation. You may use the Word Bank below during this session.

Word Bank

Average	a typical number for a data set; a value that is found by dividing the sum of a set of terms by the number of terms **Example:** The average of 4, 5, and 9 is $\frac{4+5+9}{3} = 6$.
Ecosystem	a part of ecology consisting of the environment, its living parts, and the nonliving parts that affect it
Model	a simple version of something complex; a representation
Predator	an animal that kills other animals for food **Example:** the fox
Prediction	what you think will happen based on prior knowledge and experience
Prey	animals that are caught and eaten by other animals for food **Example:** the rabbits
Shrub	a low woody plant usually with several stems **Example:** a thorny bush
Trial	each time you repeat the same experiment

Directions:

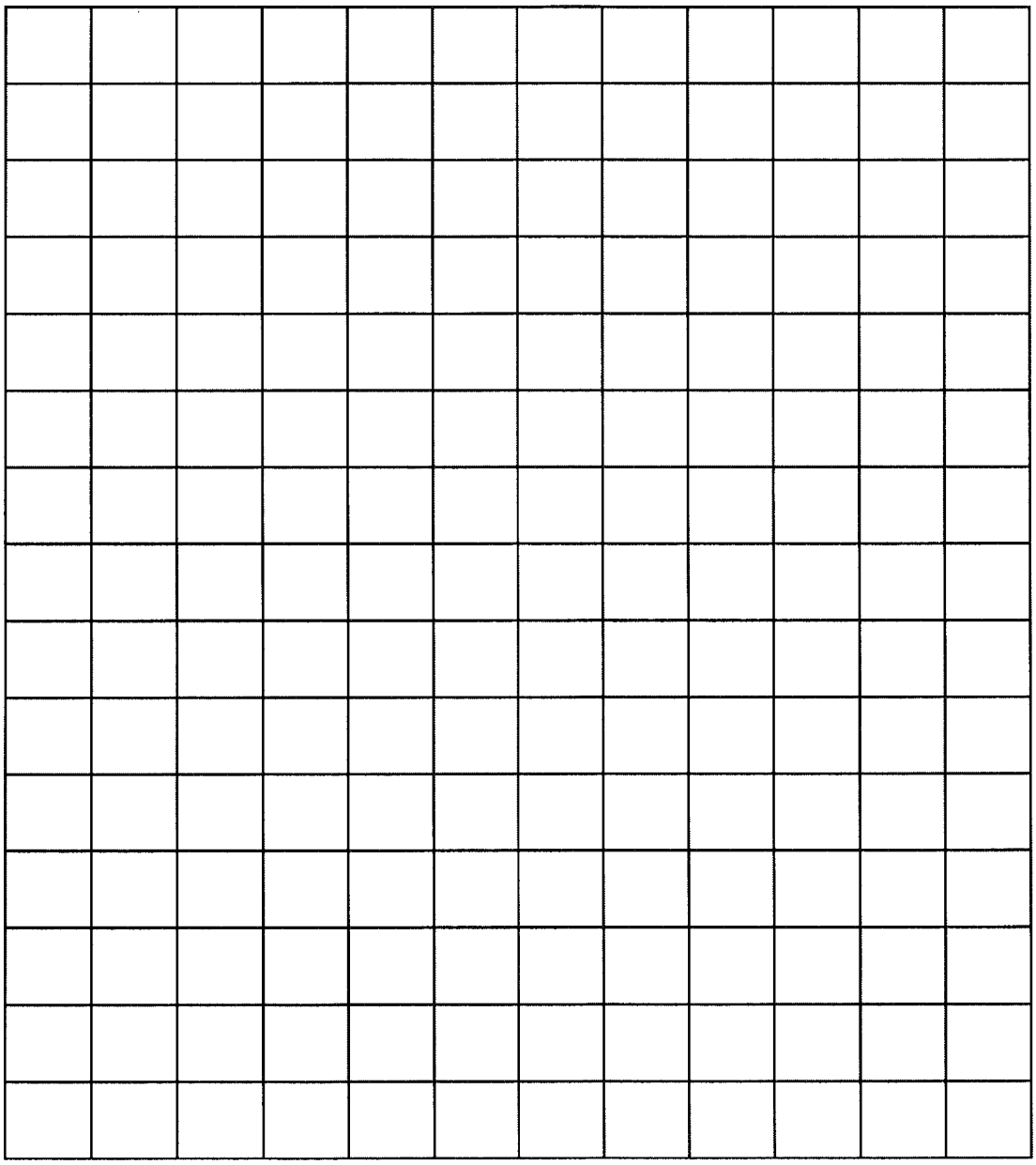
- Copy your data from the data table on page 5 of your Inquiry Booklet to the data table below. **Be sure to double-check that you copied the data correctly.**

Data Table: Rabbits Caught by Fox

Rabbits Caught by Fox	No Shrubs	Small Shrubs	Medium Shrubs	Large Shrubs
Trial 1				
Trial 2				
Trial 3				
Average (round to nearest whole number)				

- Answer questions 1 through 7.

1. Use your calculated **averages** from the data table on page 2 to graph the relationship between shrub size (including no shrubs) and number of rabbits caught by the fox. Include a title and all other required elements of a graph.



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Spring 2011 - Grade 08 NECAP Tests

Grade 08 Students in 2010-2011

Item Analysis Report - Science

School: Demonstration School 1
District: Demonstration District A
State: Rhode Island
Code: DA-DEMO1

		Released Inquiry Task								Total Test Results						
	Item Number	1	2	3	4	5	6	7		Domain Points Earned						
	Science Domain	INQ	INQ	INQ	INQ	INQ	INQ	INQ		Physical Science	Earth Space Science	Life Science	Inquiry	Total Points Earned	Scaled Score	Achievement Level
	Inquiry Construct	8	4	5	6	13	10	1								
	Depth of Knowledge Code	3	3	2	2	3	2	3								
	Item Type	CR	CR	SA	SA	CR	SA	CR								
Name/Student ID	Total Possible Points	3	3	2	2	3	2	3		15	15	15	18	63		
Amadoflores, Kelly	D082000077	3	3	2	1	3	2	2		7	13	15	16	51	850	3
Anderson, James L	D082000048	3	3	1	0	2	1	1		6	8	10	11	35	837	2
Broadbrooks, Ryan O	D082000062	2	3	1	0	2	1	1		6	12	14	10	42	842	3
Broadhead, Benjamin L	D082000065	3	0	0	1	1	0	0		5	5	5	5	20	825	1
Brown, Mika A	D082000075	2	3	1	1	2	1	2		8	8	13	12	41	841	3
Brown, Morgan M	D082000024	1	0	1	1	0	0	1		0	0	0	4	4	800	1
Buchholz, Kyle A	D082000054	1								3	3	2	1	9	809	1
Caffrey, Peter A	D082000073	0	0	0						1	2	2	0	5	800	1
Campos, Keiby	D082000034	2	2	2	0	2	1	2		9	6	12	11	38	839	2
Carpenter, Aren W	D082000031	1	2	0	0	1	0	0		4	4	7	4	19	824	1
Castner, Emily R	D082000026									0	0	0	0	0		S
Contreras, Camis P	D082000039	0	0	1	1	1	0	1		11	11	14	4	40	840	3
Cooper, Hannah L	D082000050	2	2	0	1	3	0	1		7	8	7	9	31	834	2
Davis, Briah	D082000001	3	3	1	2	3	2	2		10	10	15	16	51	850	3
Deangelis, Joseph J	D082000019	2	2	1	1	2	1	1		7	11	11	10	39	839	2
Gaona, Jonathan J	D082000079	1	0	0	0	0	0	0		4	4	5	1	14	819	1
Gardiner, Dakota L	D082000012	3	3	1	2	2	1	2		9	8	13	14	44	843	3
Gillespie, Jenna	D082000078	2	2	0	1	1	0	1		8	6	5	7	26	830	2
Glasscock, James	D082000066	0	0	0	0	0	0	1		3	3	3	1	10	812	1
Hathaway, Shane R	D082000081									0	0	0	0	0		N
Howes, Kaia M	D082000072	1	2	1	2	1	0	1		3	7	4	8	22	827	1
Hunt, Wade J	D082000057	2	0	0	1	0	1	1		6	9	7	5	27	831	2
Ibarra, Rosa	D082000011	2	2	1	0	1	0	1		3	5	2	7	17	822	1
Jarrard, Eric G	D082000018	3	3	1	2	2	1	2		9	11	11	14	45	844	3
Jensen, Sage	D082000006	0	1	0	1	1	0	0		4	4	6	3	17	822	1
Jones, Andrew A	D082000028	1	3	1	0	1	1	1		7	8	11	8	34	836	2
Leonard, Ryan		3	3	0	1	0	0	2		5	8	9	9	31	834	2
Lippincott, Kevin A	D082000070	2	3	1	1	1	1	1		8	7	10	10	35	837	2
Meader, Shelby	D082000035	3	2	1	0	0	0	0		5	4	6	6	21	826	1
Methiankit, Jonathan J	D082000056	2	0	2	1	2	2	2		14	13	14	11	52	851	3

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Spring 2011 - Grade 08 NECAP Tests
Grade 08 Students in 2010-2011
Item Analysis Report - Science

School: Demonstration School 1
District: Demonstration District A
State: Rhode Island
Code: DA-DEMO1

		Released Inquiry Task								Total Test Results						
	Item Number	1	2	3	4	5	6	7		Domain Points Earned						
	Science Domain	INQ	INQ	INQ	INQ	INQ	INQ	INQ		Physical Science	Earth Space Science	Life Science	Inquiry	Total Points Earned	Scaled Score	Achievement Level
	Inquiry Construct	8	4	5	6	13	10	1								
	Depth of Knowledge Code	3	3	2	2	3	2	3								
	Item Type	CR	CR	SA	SA	CR	SA	CR								
Name/Student ID	Total Possible Points	3	3	2	2	3	2	3		15	15	15	18	63		
Peals, Gregory	D082000037									0	0	0	0	0		E
Ramirez, Vanesa M	D082000074	0	0	0	1	0	0			0	4	2	1	7	800	1
Rayborn, Jeremy P	D082000038	1	0	0	0	1	0	1		7	4	5	3	19	824	1
Royer, Amanda	D082000061	1	0	0	1	0	0	1		6	4	3	3	16	821	1
Ryan, Jonathan J	D082000052	2	1	0	1	0	0	1		6	6	7	5	24	829	2
Shields, Justin	D082000042	3	0	1	2	0	0	0		11	7	6	6	30	833	2
Speidel, Sydne	D082000053	1	1	0	2		0	1		3	3	8	5	19	824	1
Stalsberg, Weston M	D082000014	3	2	2	2	3	0	2		3	6	5	14	28	832	2
Taveras, Dahiana		3	3	1	1	2	0	3		6	10	10	13	39	839	2
Thompson, Joshua L	D082000045	3	0	0	1	1	2	1		14	6	14	8	42	842	3
Tipping, Emily A	D082000049	3	3	1	2	2	0	2		7	10	8	13	38	839	2
Williams, Brandon P	D082000051	1	0	0	0	0	0	0		2	3	3	1	9	809	1
	Item Number	1	2	3	4	5	6	7								
	Percent Correct/Average Score: Group	1.8	1.5	0.6	0.9	1.1	0.5	1.1		6.1	6.7	7.8	7.4			
	Percent Correct/Average Score: School	1.8	1.5	0.6	0.9	1.1	0.5	1.1		6.1	6.7	7.8	7.4			
	Percent Correct/Average Score: District	1.8	1.6	0.6	0.9	1.1	0.4	1.0		6.4	6.9	7.8	7.5			
	Percent Correct/Average Score: State	1.9	1.8	0.8	1.2	1.2	0.5	1.1		6.8	7.4	8.2	8.4			