Shining a Light on

Name_____

Date _____

Directed Inquiry

Question: How long does it take for a paper sun to open up and show its rays?

Predict: The paper sun will take _____minutes and _____seconds to open up and show its rays.

Materials: (per group)

- 4 paper suns (copied on heavy yellow cardstock and cut out)
- A container of warm water (enough room for sun to open up)
- A stop watch

Procedure:

1. Fold the rays of a paper sun inward toward the center of the sun.
2. As the paper sun is placed into the water start the stop watch.
3. When the rays are open so that they are laying flat on the water stop the stop watch.
4. Record the time in the table below.
5. Do at least four trials.

Data Collection

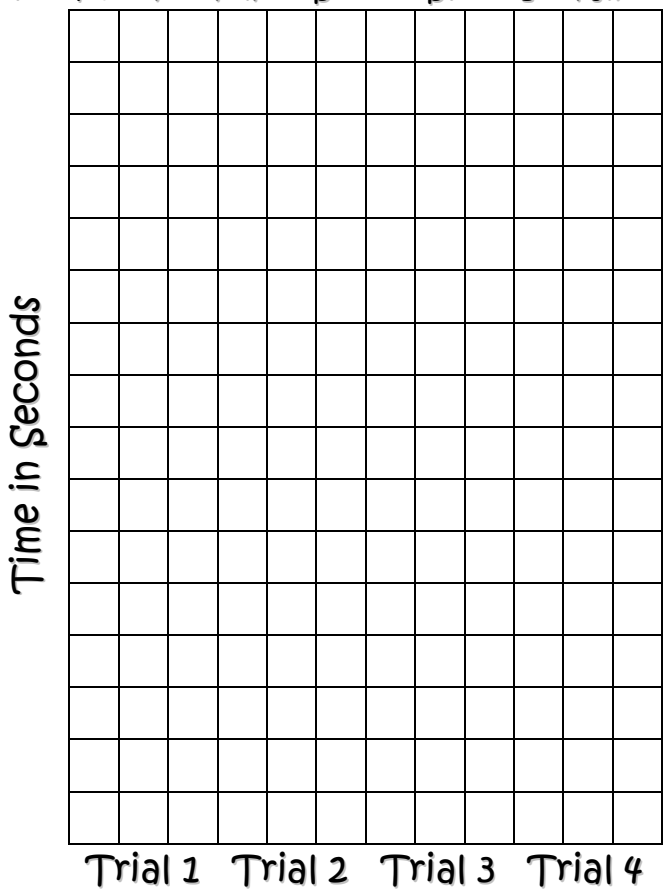
Record the times in this chart. Change the time to number of seconds.

Trial #	Time	# of Seconds
1		
2		
3		
4		

Data Analysis:

Directions: Transfer the information from the previous table to this graph.

Title: Time for Paper Sun to Show Its Rays



Results:

Describe what the data shows you about the time it takes for a paper sun to show its' rays?

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Conclusions:

Explains the assumptions you can formulate about the time it takes for a paper sun to show its rays?

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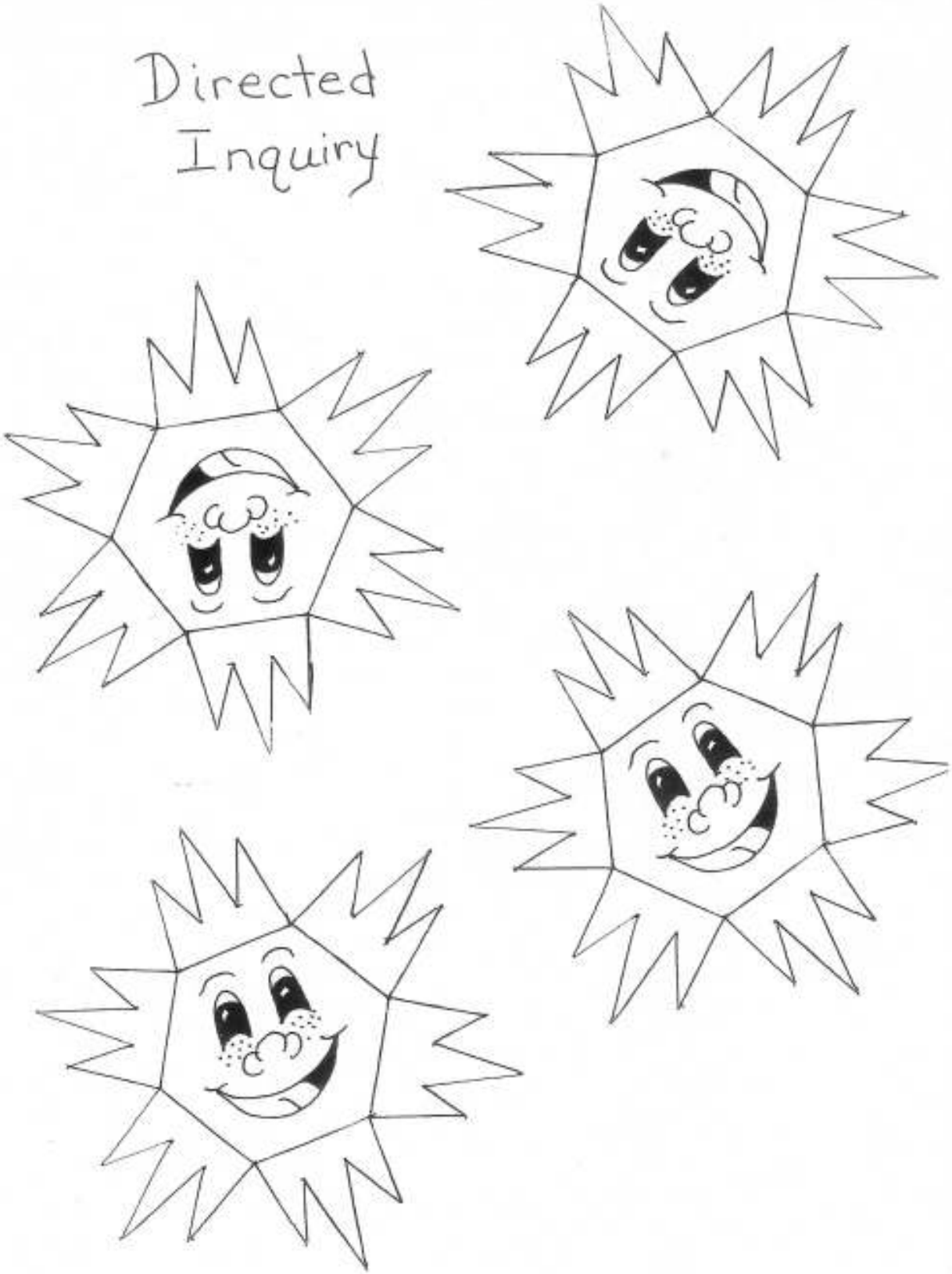
Directed
Inquiry

DIRECTED INQUIRY RUBRIC

Category	1 Insufficiently accurate, detailed, logical, complete	2 Somewhat accurate, detailed, logical, complete	3 Sufficiently accurate, detailed, logical, complete	4 Adequately accurate, detailed, logical, complete	5 Insufficiently accurate, detailed, logical, complete
Observation	Student recorded at least one observations.	Student recorded at least two observations.	Student recorded at least three observations.	Student recorded at least four observations.	Student recorded at least five observations.
Predicting	Student failed to record a prediction or made a prediction that was not relative to the experiment.		Student made a prediction and recorded the prediction but only included either minutes or seconds.		Student made a prediction and recorded the prediction in minutes and seconds.
Procedure	Student left out four or more of the steps of the procedure	Student left out three or more of the steps of the procedure	Student left out two or more of the steps of the procedure	Student left out one or more of the steps of the procedure	Student followed all the procedures as required.
Data Collection	Student performed less than three trials.	Student performed three or more trials and recorded the results for all the trials but in a format other than the one required.	Student performed four or more trials and recorded the results for all the trials but in a format other than the one required.	Student performed three or more trials and recorded the results for all the trials in the required format.	Student performed four or more trials and recorded the results for all the trials in the required format.
Analysis	Student created a graph showing the results for only one trials.	Student created a graph showing the results for two trials.	Student created a graph showing the results for three trials.	Student created a graph showing the results for four trials.	Student created a graph showing the results for four trials and added color or graphics.
Results	Student wrote a statement but it was not related to the graph.	Student wrote only one statement about the results of the experiment. The statement is a true statement about the results shown in the graph.	Student wrote at least two statements about the results of the experiment. The statements are true statements about the results shown in the graph.	Student wrote at least three statements about the results of the experiment. The statements are true statements about the results shown in the graph.	Student wrote at least four statements about the results of the experiment. The statements are true statements about the results shown in the graph.
Conclusions	The student wrote a very short statement that showed some misunderstanding of what the results demonstrated.	Student wrote one sentence that demonstrated an understanding of the results of the experiment.	Student wrote two sentences that demonstrated an understanding of the results of the experiment.	Student wrote three sentences that demonstrated an understanding of the results of the experiment.	Student wrote a paragraph that demonstrated an understanding of the results of the experiment.