

2011-2012 VTAAP Inquiry Target Behaviors

STAGE I: Develop Question and Plan Investigation		
Inquiry GE: 1- Identify a Question		
<i>Students demonstrate their understanding of scientific questioning by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> Using personal experience or interest to generate question Identifying a question that can be answered either through close observation or an experiment (cause/effect) 	<ul style="list-style-type: none"> Developing a question that shows evidence of prior scientific knowledge 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Using a Research question
Inquiry GE: 2- Make a Prediction		
<i>Students demonstrate their understanding of predicting and hypothesizing by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> Identifying what may happen in the future Supporting the prediction with logical reasoning 	<ul style="list-style-type: none"> Using personal experience to support prediction Supporting prediction with scientific reasoning 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Random guessing
Inquiry GE: 3- Develop a Procedure		
<i>Students will demonstrate their understanding of experimental design by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> Developing a procedure that will gather evidence to answer the question posed Identifying a logical sequence of steps 	<ul style="list-style-type: none"> Identifying the independent and dependent variables for experimental questions Using scientific terminology appropriate to the investigation Specifying a list of materials and/or measurement tools 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Providing single photograph of materials and set up

STAGE II: Conduct Investigations		
Inquiry GE: 4- Perform the Procedure		
<i>Students demonstrate their ability to conduct experiments by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> Completing steps identified in the planned procedure Conducting multiple trials 	<ul style="list-style-type: none"> Using appropriate measurement tools Using scientific notebook or other suitable format to record findings/ observations throughout procedure Using technology to collect and store information 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Random investigation <input checked="" type="checkbox"/> Directional prompting
Inquiry GE: 5- Collect and Organize the Data		
<i>Students demonstrate their understanding of predicting and hypothesizing by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> Collecting relevant data Organizing data into related categories Using appropriate representation to display data (e.g., graph, table, chart, scientific drawing) 	<ul style="list-style-type: none"> Representing data quantitatively Using scientific language to label or represent data Using technology effectively to organize and represent data 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Random or unorganized notes and/or observations

STAGE III: Develop and Communicate Conclusions		
Inquiry GE: 6- Analyze the Data and Construct a Conclusion		
<i>Students demonstrate their ability to analyze data by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> ● Relating data to the original question ● Providing a reasonable explanation that accurately reflects the data ● Interpreting the data for patterns and trends 	<ul style="list-style-type: none"> ○ Identifying limitations and sources of error within the design ○ Analyzing significance of data ○ Using knowledge of scientific concepts to evaluate data 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Simply restating the data
Inquiry GE: 7- Evaluate the Prediction		
<i>Students demonstrate their ability to explain data by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> ● Comparing the proposed predication and actual data ● Declaring whether original predication was/was not supported 	<ul style="list-style-type: none"> ○ Identifying changes in thinking or beliefs 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Simply restating original prediction
Inquiry GE: 8- Communicate the Results		
<i>Students will demonstrate their ability to apply results by:</i>		
Required	Extended	Not allowed
<ul style="list-style-type: none"> ● Re-stating the original question to others not directly involved in the inquiry ● Sharing findings related to the question with others not directly involved in the inquiry ● Stating conclusion(s) with others not directly involved in the inquiry 	<ul style="list-style-type: none"> ○ Sharing with a variety of audiences ○ Comparing results to findings of others ○ Proposing new questions or investigations ○ Using technology to communicate results effectively 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Sharing results with instructing teacher only