



Understanding Indicator Tool

TOPIC: Students will demonstrate the level to which they understand scientific variables and forming hypothesis.

a.) Define the four variables: 4 marks

1.) Control:

2.) Controlled Variable:

3.) Responding Variable:

4.) Manipulated Variable:

b.) Identify the manipulated variable and the responding variable from this experiment description. (2marks)

Mr. Wessner noticed that music seemed to affect student performance when writing quizzes in class. He wanted to explore if the type of music (classical, rock, rap, and opera) affected student's outcome on quiz grades.

1.) What would be the manipulated variable in this experiment?

2.) What would be the responding variable in this experiment?

c.) What three parts must be included when you write a hypothesis for an experiment? 3 marks

d.) Write a hypothesis for Mr. Wessner's "music affects on quiz scores" experiment.



Science Fair Experiment : Understanding Variables and Hypothesis in Science

Teacher Name: **Mr. Wessner**

Student Name: _____

CATEGORY	4	3	2	1
Variables	Independently identified and clearly defined which variables were going to be changed (independent variables) and which were going to be measured (dependent variables).	Independently identified which variables were going to be changed (independent variables) and which were going to be measured (dependent variables). Some feedback was needed to clearly define the variables.	With adult help, identified and clearly defined which variables were going to be changed (independent variables) and which were going to be measured (dependent variables).	Adult help needed to identify and define almost all the variables.
Hypothesis Development	Independently developed an hypothesis well-substantiated by a literature review and observation of similar phenomena.	Independently developed an hypothesis somewhat substantiated by a literature review and observation of similar phenomena.	Independently developed an hypothesis somewhat substantiated by a literature review or observation of similar phenomena.	Needed adult assistance to develop an hypothesis or to do a basic literature review.