**Science Fair: Model/Research**

NAME:

Students create a science model. The model should be based on a scientific concept of the student’s choosing.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Below Expectation****1 point** | **Approaching Expectation****2 points** | **Meets Expectation****3 points** | **Exceeds Expectation****4 points** | **SCORE** |
| **Science Concepts** | Model does not relate to a particular science concept. | Model makes a particular science concept easier to understand, define, quantify, visualize or simulate, but there may be errors or omissions. | Model clearly represents scientific concepts and is scientifically correct, making the concept easier to quantify, visualize or simulate. | Model clearly represents scientific concepts and is scientifically correct, making the concept easier to quantify, visualize or simulate in a novel or creative way. |  |
| **Construction** | The model is poorly constructed. | The model is constructed but uses materials that are not well chosen. | The model is carefully constructed with materials but does not showcase student’s creativity. | The model is carefully constructed with materials that showcase student’s creativity and are appropriate. |  |
| **Diagram** | Model is not accompanied by a diagram. | Model is accompanied by a diagram but may contain errors. | Model is accompanied by a diagram. However, parts of the diagram are not labeled and cannot be used as a key to better understand the model/science concept. | Model is accompanied by a carefully designed diagram. The diagram is labelled and can be used as a key to better understand the model/science concept. |  |
| **Presentation** | Does not speak clearly, make eye contact, or is unprepared to present model. | Eye contact, clear speech, or preparation to present model is minimal. | Speaks clearly, makes eye contact, and presents model well. | Anticipates questions and takes ownership of the model. |  |

 NAME: TOTAL SCORE

**Science Fair: 3-D ENGINEERING-things that move**

NAME:

Build an object of your choice using mostly cardboard. It should demonstrate your design and engineering skills. There is no limit to size.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Below Expectation****1 point** | **Approaching Expectation****2 points** | **Meets Expectation****3 points** | **Exceeds Expectation****4 points** | **SCORE** |
| **Effort** | The student did the minimum or the structure was never completed. | The student did the task in a satisfactory manner, but lack of planning was evident. | The structure shows that the student did the task in a good manner and planning was evident. | The structure shows that the student applied the principles of design in a unique manner and a lot of effort was put in. |  |
| **Materials**Does the design use a lot of recycled materials? | There are no recycled materials. | There are some recycled materials. | There are a lot of recycled materials used. | All materials used are recycled. |  |
| **Design**Is there some kind of structure and design to it? Does it look 3-D? How does it look from different angles? | Use of materials made it difficult to determine what was built. | The design is not well put together, some design structures seem weak. | The design is good and looks structurally sound but some parts are still not secure. Design works. | The design is outstanding, structurally sound, and works. |  |
| **Creativity** | The student displayed a design that has been done many times over. | The student displayed a design that has not been done many times over. | The student displayed a design that has not been done many times over. | The student displayed a unique design that is original. |  |

 NAME: TOTAL SCORE

**Science Fair: Demonstration**

NAME:

Show a scientific principle in operation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Below Expectation****1 point** | **Approaching Expectation****2 points** | **Meets Expectation****3 points** | **Exceeds Expectation****4 points** | **SCORE** |
| **Organization** | Did not bring all materials to complete lab demonstration. | Have all materials present, but not organized in a way that the demonstration can run smoothly. | Have all materials present and mostly organized so the demonstration can run smoothly. Minor problems that do not hinder the overall effectiveness of the demonstration. | All materials present and easily accessible. Demonstration runs smoothly. |  |
| **Presentation skills** | Does not make eye contact or project voice so that people can hear it. Does not explain demonstration topic to audience. | Eye contact and voice projection limited. | Eye contact and voice projection maintained through the majority of the presentation. | Good eye contact and voice projection maintained throughout the entire presentation. |  |
| **Science Content** | Demonstration is good but no explanation of the topic. | Limited explanation given and student shows limited understanding of topic. | Minor lapses in explanation of demonstration topic to audience. Student does not show a complete understanding of the topic. | Detailed explanation of demonstration topic to audience. Student shows a complete understanding of topic. |  |
| **Professionalism / Safety** | Does not take demonstration seriously. Very careless. Lax attitude toward assignment. Shows no sign of practice or preparation. Shows no regard for safety. | Careless during demonstration. Shows lack of practice and preparation. Shows very little knowledge of safety procedures. | Very few moments of a careless attitude. Majority of the time conducts themselves in a respectable manner. Shows practice and preparation. Minor problems with safety during demonstration. | Respectable at all times. Shows extensive practice and preparation. No safety issues during demonstration. |  |
| **Interests / Excitement** | Demonstration was not interesting and lacked excitement. | Demonstration was only slightly interesting and was exciting to only a few viewers. | Demonstration was quite interesting and excited most viewers. | Demonstration was very interesting and captured the excitement of all those viewing the presentation. |  |

TOTAL SCORE

**Science Fair: Experimental/Research**

NAME:

A cause and effect experiment where there are independent, dependent and controlled variables. It must be written in the scientific method and mounted on poster board or tri-fold boards.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Below Expectation****1 point** | **Meets Expectation****2 points** | **Exceeds Expectation****3 points** | **SCORE** |
| **ASK****the question** | The questions does not make sense OR can not be answered through experimentation. No variables used in the question. | The question makes sense and can be answered through experimentation. Some variables are used in the question. | The question makes sense and can be answered through experimentation. Variables are used in the question. |  |
| **CONDUCT****the experiment** | **Procedures** were unclear and not listed step-by-step. Little or no **materials** listed. | Step-by-step **procedures** were followed. Some improvements were needed to develop the project. A list of **materials** is included. | Step-by-step **procedures** were followed, logical and clearly written. Specific list of **materials** is included. |  |
| **ANALYZE****the results** | **Data table** and **graph** contain errors in labels, drawing and/or information. | **Data table** and **graph** are somewhat accurately labeled and drawn. There may be information missing. | **Data table** and **graph** are accurately labeled, drawn and information is correct. |  |
| **VARIABLES** | **Only 1 variable present.** | **2 variables present-** any of the three; independent, dependent and controlled. | **All 3 variables present and accurate****(independent-**the one that is changed.**Dependent-** the one that is measured because of the change.**Controlled-** the ones kept constant so that experiment is reliable**.)** |  |
| **CONCLUDE** | Results and conclusions are unclear and show an inaccurate understanding of knowledge gained from conducting the experiment. The paragraphs show little thought and effort. | Results and conclusions are unclear and show somewhat of a clear and accurate understanding of knowledge gained from conducting the experiment. The paragraphs show some thought and effort. | Results and conclusions are unclear and show a clear and accurate understanding of knowledge gained from conducting the experiment. The paragraphs show thought and effort. |  |
| **COMMUNICATE****the results** | The **Display Board** is incomplete, sloppy, and shows little effort and creativity. **Presentation** was disorganized and planned poorly. | The **Display Board** is mostly complete, neatly written or typed, and shows some effort and creativity. **Presentation** was well organized and planned for the most part. Everyone spoke clearly and had a part. | The **Display Board** is complete, neatly written or typed, and shows effort and creativity. **Presentation** was well planned and organized. Everyone spoke clearly and had a part. |  |
| **Spelling, Grammar, Punctuation, Capitalization** | There are many mechanical errors. | There are few mechanical errors. | All mechanics are correct. |  |
| **Group Work** | Group members were not on task at all times and did not work as a team. | Group members were on task most of the time, working cooperatively on the project as a team. | Group members were on task at all times working cooperatively on the project as a team. |  |