

## Grading Scale:

- 16 points = Excellent
- 12-15 points = Good
- 8-11 points = Fair
- Below 8 = Needs Improvement

## Cloze Activity Rubric (Formative Assessment)

### Cloze Activity Rubric (Formative Assessment)

Criteria	Excellent (4 pts)	Good (3 pts)	Fair (2 pts)	Needs Improvement (1 pt)	Points
Completion	All blanks correctly filled.	1-2 blanks incorrect.	3-4 blanks incorrect.	5 or more blanks incorrect.	/4
Accuracy	All answers are accurate and show full understanding.	Most answers are correct and show understanding.	Some answers are correct, but several show confusion.	Many answers are incorrect, showing little understanding.	/4
Neatness/Legibility	Work is neat, legible, and easy to read.	Work is mostly neat and legible.	Work is somewhat difficult to read.	Work is difficult to read or messy.	/4
Effort	Shows excellent effort and attention to detail.	Shows good effort and attention to detail.	Some effort shown, but more detail needed.	Little effort shown.	/4
<b>Total Points</b>					<b>/16</b>

## PowerPoint Presentation Rubric (Summative Assessment)

### PowerPoint Presentation Rubric (Summative Assessment)

Criteria	Excellent (4 pts)	Good (3 pts)	Fair (2 pts)	Needs Improvement (1 pt)	Points
Content (Accuracy/Completeness)	All slides include complete, accurate information related to the project.	Most slides include accurate and relevant information.	Some slides are missing key details or contain inaccuracies.	Many slides lack important information or are inaccurate.	/4
Organization (Logical Flow)	Presentation is logically organized, easy to follow, and flows smoothly.	Presentation is mostly organized, with minor issues in flow.	Some sections are disorganized, making it harder to follow.	Presentation is poorly organized and difficult to follow.	/4
Design (Visual Appeal)	Visually engaging with effective use of images, color, and layout.	Design is visually appealing but could use more images or color balance.	Design is basic with limited images or creativity.	Design is plain, lacks visuals, or is cluttered.	/4
Presentation Skills (Delivery)	Speaks clearly, makes eye contact, and is confident.	Speaks clearly most of the time with some eye contact.	Speaks unclearly or lacks confidence at times.	Mumbles, rarely makes eye contact, or is difficult to hear.	/4
<b>Total Points</b>					<b>/16</b>

# Cheat Sheet for the Combination Science or Engineering

## Logbook and Research Paper:

In **APA**, only the headings are bolded. The content under each heading is regular text, double-spaced, and left-aligned. **In APA format**, each section of a paper typically **does not** require a separate page unless otherwise specified.

Here's a breakdown of how sections are generally arranged:

1. **Title Page:** Starts on its own page.
2. **Abstract:** Starts on a new page (if required).
3. **Main Body:** The sections of the main body (e.g., Introduction - Conclusion) are **continuous**, meaning they follow one another without starting new pages for each section.
4. **References:** Starts on a new page.

The following are examples of how you would format headings for your science fair project in APA style, using the appropriate bolding for each level:

Project Title

Student Name

School Name

Class & Grade

Date

## **Abstract**

A brief summary of a research paper or project that outlines the key points, including the purpose, methods, results, and conclusions. It is typically 150-250 words long and helps readers quickly understand the main goals and findings of the work. The abstract is placed after the title page but before the introduction in an APA paper and serves as a concise overview of the entire project. The word "**Abstract**" should be centered and in bold, but the abstract text starts directly underneath without any punctuation after the title.

## **Table of Contents**

- A list of all sections in the report with page numbers for easy reference

## **Introduction**

- Background: Describe the experiment, including what it is and why you're investigating.
- Purpose: Explain what you aim to discover or prove through this experiment.
- Hypothesis: An educated guess or prediction that explains what you think will happen in an experiment. It should be something you can test through observation or experimentation.
- Testable Question: A clear question that can be answered through your experiment by hands-on investigation, measurement, or observation, focusing on what you're trying to find out or prove.

## **Schedule/Daily Notes**

- A log of what was done each day, including any challenges, changes, notes, sketches, notes, or updates. Include an outline of the timeline for the project, including when each part of the experiment was conducted.

## **Background Research**

- A section introducing the topic and explaining relevant studies or information related to the project.

## **Experimental Procedure/Method**

- A detailed, step-by-step explanation of the materials required and how the experiment was conducted.

### **Data Collection**

- Record all data, such as the number of attempts and successes, typically includes a graph to help the viewer visually see your results.

### **Observations/Results**

- An analysis of the data collected, including any patterns observed and final results.

### **Conclusion**

- A summary of the findings, whether the hypothesis was supported or refuted, and suggestions for next steps or further experiments.



## **References**

- A hanging indented alphabetical list of all references cited in APA format, including any personal instruction, interviews, books, articles, or online sources.

The following example illustrates how to follow the structure  
to create your FINAL project

1. Title Page:

The Mysterious Movements of the Fortune Teller Fish

Your Name

Your School

Your Class & Grade

The Due Date (or the date you turned it in)

## **Abstract**

The goal of this project is to investigate the movements of the Fortune Teller Fish, a novelty item made of thin plastic that curls or moves when placed in a hand. Specifically, the project aims to understand what causes these movements and whether they can be influenced by factors such as heat, moisture, or static electricity.

To conduct the experiment, a Fortune Teller Fish was placed in various conditions, including exposure to dry hands, gloved hands, and hands warmed by friction. Observations were recorded on how the fish moved or curled under each condition. Materials included the fish, gloves, and a notebook for recording results.

The Fortune Teller Fish consistently curled when placed on a bare hand, especially when the hand was warmed. However, it remained flat on a gloved hand, suggesting that moisture from the skin, rather than heat or static electricity, was responsible for the movement.

The hypothesis that heat was the cause of the movement was not supported. Our results suggest that the Fortune Teller Fish's movements are caused solely by moisture from the hand. This finding highlights the role of moisture, an initially overlooked factor, in triggering the fish's reaction. This is likely due to expansion or contraction. This result may have broader implications for understanding how materials respond to environmental changes.

## **Table of Contents**

1. Introduction – Page 1
2. Schedule/Daily Notes – Page 1 - 2
3. Background Research – Page 2
4. Experimental Procedure/Method – Page 2 - 3
5. Materials – Page 3
6. Data Collection – Page 3
7. Observations/Results – Page 4
8. Conclusion – Page 4
9. References – Page 5

## **Introduction**

The Fortune Teller Fish is a small plastic fish that moves or curls when placed on your hand. Our goal for this experiment is to investigate why the fish moves. Some of us thought it might be due to heat, while others speculated it could be affected by static electricity. A few of us even joked that maybe it could actually tell our fortunes like the packaging claims. This project involves testing different conditions to determine what causes the fish to move. To discover the factors that make the Fortune Teller Fish move when placed on a hand. We believe the fish will move because of heat, as the warmth of a hand could cause a reaction that leads to movement. Does the temperature of the surface the fish is placed on affect its movement?

## **Schedule/Daily Notes**

Monday, 09/23/24

- 1: Our teacher told us we'd be working with the Fortune Teller Fish today. I've never used it before, but one person in my class said they had seen it at a party. Most of us had no idea how it worked, but we were excited to see what would happen.
- 2: I started experimenting with different surfaces. The fish didn't move much on the table, but it moved a lot in my hand. I thought maybe the heat was causing it to curl.

3: I tried testing with gloves, bare hands, and rubbing my hands to warm them up. The fish seemed to move a lot more when my hands were warm, but I wasn't sure if it was just the heat or something else.

### **Background Research**

At first, none of us really knew how the Fortune Teller Fish worked. We made guesses that maybe heat or static electricity from our hands was making it move. One person even thought it might be reacting to the energy in the room (Student, 2024)! After running our tests and making observations, our teacher explained that the fish is made of a material called a hygroscopic polymer (Mucci, 2024). We learned that hygroscopic materials absorb moisture, and that's what causes the fish to curl Google (2024). The movement wasn't from heat or static electricity like we thought, but because the fish was reacting to moisture from our skin (Mucci, 2024). This is how the Fortune Teller Fish works—by absorbing moisture, the plastic changes shape and moves.

### **Experimental Procedure/Method**

Here are the steps we followed in the experiment:

Trial 1: We placed the fish on a flat table and watched to see if it moved.

Trial 2: Next, we placed the fish on our bare hands to see how it reacted.

Trial 3: We put on gloves and placed the fish on the glove to test if it would still move.

Trial 4: We rubbed our hands together to generate heat, then placed the fish in our warm hands to see if it would move more.

Trial 5: For fun, we blew on the fish while it was on the table to see if air movement affected it.

We repeated each step three times to make sure the results were accurate.

### Materials

Fortune Teller Fish Novelty Toy, disposable gloves, notebook

### Data Collection

**Table 1**

*Fortune Fish Trials*

<b>Trial</b>	<b>Condition</b>	<b>Movement (Yes/No)</b>	<b>Type of Movement (Curling, Twisting, etc.)</b>	<b>Fortune Matched? (Yes/No)</b>
1	Table	No	Slight curl at the edges	No
2	Bare Hand	Yes	Full curl	No
3	Gloved Hand	No	No movement	No
4	After Rubbing	Yes	Strong curling	No
5	Breath	Slight	Minor curling	No



## **Observations/Results**

- Trial 1 (Table): The fish barely moved when placed on the table, with only slight curling at the edges.
- Trial 2 (Bare Hand): The fish curled up quickly when placed on our bare hands, especially at the head and tail.
- Trial 3 (Gloved Hand): The fish stayed flat when we put it on a gloved hand. It didn't move at all.
- Trial 4 (After Rubbing Hands): The fish moved a lot after we rubbed our hands together. It curled up more than in any other trial.
- Trial 5 (Breath): Blowing on the fish caused it to curl just a little, but not nearly as much as when it was in our hands.

## **Conclusion**

At first, I thought that the fish would move because of heat from our hands, but it turns out that wasn't the whole story. After doing the experiment, I learned that the fish moves because it absorbs moisture from our skin. The fish barely moved on the table or on the glove, but when it was in contact with our hands, especially after rubbing them, it curled up a lot. My original hypothesis that the fish moved because of heat was incorrect. The real reason the fish moves is because it's made of a material that absorbs moisture, which causes it to curl. So, it turns out the Fortune Teller Fish isn't really telling fortunes—it's just reacting to the moisture in our hands.

## References

Google. (2024). General information on the Fortune Teller Fish. Retrieved from

<https://www.google.com>

Mucci, J. W. (2024). Personal instruction on the Fortune Teller Fish experiment.

Burns Science and Technology School, Oak Hill, FL.

Student in Class. (2024). Classroom discussion about Fortune Teller Fish

movements. Burns Science and Technology School, Oak Hill, FL.

## **Fortune Teller Fish Cloze Activity Worksheet-Formative Grade**

**Directions:** Fill in the blanks using your knowledge of the "Saving Fred" project.

### **1. Title Page**

**Project Title:** The Mysterious Movements of the Fortune Teller Fish

**Student Name:** \_\_\_\_\_

**School Name:** \_\_\_\_\_

**Class & Grade:** S.T.E.A.M. 8<sup>th</sup> Grade \_\_\_\_\_

**Date:** \_\_\_\_\_

### **2. Abstract**

The Fortune Teller Fish is a small \_\_\_\_\_ fish that moves or curls when placed on your \_\_\_\_\_. Our goal for this experiment was to figure out why the fish \_\_\_\_\_. Some of us thought it was because of \_\_\_\_\_, while others wondered if it had something to do with \_\_\_\_\_ \_\_\_\_\_. A few of us even joked that maybe it could actually tell our \_\_\_\_\_. This project was about testing different conditions to see what makes the fish \_\_\_\_\_.

### **3. Daily Notes**

Our teacher told us we'd be working with the Fortune Teller Fish today. I've never used it before, but one person in my class said they had seen it at a \_\_\_\_\_. Most of us had no idea how it worked, but we were excited to see what would happen.

I started experimenting with different surfaces. The fish didn't move much on the \_\_\_\_\_, but it moved a lot in my \_\_\_\_\_. I thought maybe the \_\_\_\_\_ was causing it to \_\_\_\_\_.

I tried testing with \_\_\_\_\_, bare hands, and rubbing my hands to warm them up. The fish seemed to move a lot more when my hands were \_\_\_\_\_, but I wasn't sure if it was just the \_\_\_\_\_ or something else.

#### **4. Background Research**

At first, none of us really knew how the Fortune Teller Fish worked. We made guesses that maybe \_\_\_\_\_ or \_\_\_\_\_ \_\_\_\_\_ from our hands was making it move. One person even thought it might be reacting to the \_\_\_\_\_ in the room! After running our tests and making observations, our teacher explained that the fish is made of a material called a \_\_\_\_\_ polymer. We learned that these materials absorb \_\_\_\_\_, and that's what causes the fish to \_\_\_\_\_. The movement wasn't from \_\_\_\_\_ or \_\_\_\_\_ \_\_\_\_\_ like we thought, but because the fish was reacting to \_\_\_\_\_ from our skin.

#### **5. Experimental Procedure/Method**

Here are the steps we followed in the experiment:

1. We placed the fish on a \_\_\_\_\_ \_\_\_\_\_ and watched to see if it moved.
2. Next, we placed the fish on our \_\_\_\_\_ \_\_\_\_\_ to see how it reacted.
3. We put on \_\_\_\_\_ and placed the fish on the glove to test if it would still \_\_\_\_\_.

4. We rubbed our \_\_\_\_\_ together to generate heat, then placed the fish in our \_\_\_\_\_ to see if it would move more.

5. For fun, we \_\_\_\_\_ on the fish while it was on the table to see if air movement affected it.

We repeated each step \_\_\_\_\_ times to make sure the results were accurate.

**6. Name the Section that is missing here:**

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**7. Name the Section that is missing here:**

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**8. Observations/Results**

Trial 1 (Table): The fish \_\_\_\_\_ moved when placed on the table, with only slight \_\_\_\_\_ at the edges.

Trial 2 (Bare Hand): The fish \_\_\_\_\_ up quickly when placed on our \_\_\_\_\_ hands, especially at the head and tail.

Trial 3 (Gloved Hand): The fish stayed \_\_\_\_\_ when we put it on a \_\_\_\_\_ hand. It didn't \_\_\_\_\_ at all.

Trial 4 (After Rubbing Hands): The fish moved \_\_\_\_\_ after we rubbed our hands together. It \_\_\_\_\_ up more than in any other trial.

Trial 5 (Blowing): Blowing on the fish caused it to \_\_\_\_\_ just a little, but not nearly as much as when it was in our \_\_\_\_\_.

## 9. Conclusion

At first, I thought that the fish would move because of \_\_\_\_\_ from our hands, but it turns out that wasn't the whole story. After doing the experiment, I learned that the fish moves because it absorbs \_\_\_\_\_ from our skin. The fish barely moved on the \_\_\_\_\_ or on the \_\_\_\_\_, but when it was in contact with our hands, especially after rubbing them, it \_\_\_\_\_ up a lot. My original hypothesis that the fish moved because of \_\_\_\_\_ was incorrect. The real reason the fish moves is because it's made of a material that absorbs \_\_\_\_\_, which causes it to curl. So, it turns out the Fortune Teller Fish isn't really telling fortunes—it's just reacting to the \_\_\_\_\_ in our hands.

## 10. References

Google. (2024). \_\_\_\_\_ on the Fortune Teller Fish. Retrieved from <https://www.google.com>

Mucci, J. W. (2024). \_\_\_\_\_ on the Fortune Teller Fish experiment. Burns Science and Technology School, Oak Hill, FL.

Student in Class. (2024). \_\_\_\_\_ about Fortune Teller Fish movements. Burns Science and Technology School, Oak Hill, FL.

# **YOUR 8<sup>th</sup> Grade SCIENCE FAIR PROJECT!!!!:**

Here's how **you** will design each slide for your **summative grade** science fair project:

## **Title Slide**

Title: "Fortune Teller Fish Science Experiment"

Fields: Student Name, Class & Grade, Date

Design: Use a clean background with subtle science icons (e.g., molecules, gears, test tubes, an image of a Fortune Fish) or simple patterns. Ensure the text is centered with a large, easy-to-read font.

## **Abstract Slide**

Title: "Abstract" (centered and bold)

Content: Leave space for a brief summary of the project, including Purpose, Methods, Results, and Conclusion.

Design: Minimalist, with the text box below the title.

## **Table of Contents Slide**

Title: "Table of Contents" (centered and bold)

Sections: Introduction, Schedule/Daily Notes, Background Research, Experimental Procedure, Data Collection, Observations/Results, Conclusion, References

Design: List format with a clean layout and simple section titles.



## **Introduction Slide**

Title: "Introduction" (bold and centered)

Subsections: Background, Purpose, Hypothesis, Testable Question

Design: Use bullet points to briefly outline each subsection. Optionally, include a small visual, like a Fortune Teller Fish or a scientific icon.

## **Schedule/Daily Notes Slide**

Title: "Schedule/Daily Notes" (centered and bold)

Content: Leave space for a log of daily activities, challenges, and changes during the experiment.

Design: May use a table or a timeline graphic to help visualize the timeline.

## **Background Research Slide**

Title: "Background Research" (centered and bold)

Content: Summarize important studies and related information.

Design: Simple layout with space for images or references if needed.

## **Experimental Procedure/Method Slide**

Title: "Method" (centered and bold)

Subsections: Materials, Step-by-step procedure

Design: Use a straightforward list of materials and detailed steps for the procedure.

## **Data Collection Slide**

Title: "Data Collection" (centered and bold)

Table: Create a table to show the trials and observations.

Design: Insert a simple table with room for data from each trial.

### **Observations/Results Slide**

Title: "Observations/Results" (centered and bold)

Content: Summarize the findings with space for graphs or charts.

Design: Include placeholders for visuals that represent the data collected.

### **Conclusion Slide**

Title: "Conclusion" (centered and bold)

Content: Summarize whether the hypothesis was supported or refuted and any potential next steps.

### **References Slide**

Title: "References" (centered and bold)

Content: List your references in APA format.