MSEF

Massachusetts Science
+ Engineering Fair

# Science Fair Project Planning Template

*Make a copy and adapt for your use, adapt for engineering projects as needed*

**Student Name: _____**

**Project Draft Title: _____**

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## TASKS Planning Template

| Task | Details / Notes | Due Date | Teacher Check When Complete |
|---|---|---|---|
| Name/Title | | | |
| Question | | | |
| Hypothesis | | | |
| Variables | | | |
| Materials | | | |
| Procedure | | | |
| Conduct Experiment (3 trials) | | | |
| Create Table | | | |
| Create Chart or Graph | | | |

## Question

Write the scientific question you want to investigate:

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## Hypothesis

What do you think will happen? Why?

_____

_____

_____

## Variables

➢ **Independent Variable (what you will change):**

- _____
- _____

➢ **Controlled Variables (what you will keep the same):**

- _____
- _____
- _____

➢ **Dependent Variable (what you will measure):**

- _____

_____

## Materials

List all materials with **units and amounts**:

_____

_____

Get teacher approval for safety: ☐

_____

## Procedure

Write step-by-step instructions for how to conduct your experiment:

1. _____
2. _____
3. _____
4. _____

(continue as needed)

_____

## Conducting experiment Template

| Trial # | Independent Variable | Observations / Notes | Measurement (Dependent Variable) | Explanation | Teacher Check |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

## Data & Graphing

➢ **Circle The Graph Type:**

- Bar Graph
- Line Graph
- Other: _____

➢ **What do the axes represent?**

- **X-axis**: _____
- **Y-axis**: _____

➢ **Why did you choose this graph?**

_____

_____

_____

➢ **What patterns did you notice?**

_____

_____

_____

# Science Fair Timelines

***School Fair Date:*** ***Regional Fair Date:*** ***State Fair Date:***

## Step 1: Plan

| Week | Task | Details / Notes | Due Date | Teacher Check |
|---|---|---|---|---|
| 1-2 | Pre-work: choose a topic | Start notebook/background research | | |
| 3 | Question or Problem Formulation - 3 draft ideas | Explore feasibility and rules | | |
| 4 | Submit statement and background research to teacher | Include variables, possible solutions | | |
| 5 | Draft research plan for teacher review, modify as needed | Independent, Controlled, Dependent | | |
| 5 | List Materials | Units and amounts | | |
| 5 | Write Procedure | Step-by-Step instructions | | |

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## Step 2: Submit

| Week | Task | Details / Notes | Due Date | Teacher Check |
|---|---|---|---|---|
| 6 | Submit final paperwork to teacher for approval | | | |
| 6 | Collect signatures (parent, teacher, any other adult) | | | |
| 7 | Submit forms to zFairs for approval | Pre-approval required for restricted areas (see manuals) | | |

| | | | | |
|---|---|---|---|---|
| 7 | Wait for approval (up to 2 weeks) | Plan ahead, Prep your research paper while you wait | | |

## Step 3: Do the work

Once approved, time to experiment and explore.

| Week | Task | Details / Notes | Due Date | Teacher Check |
|---|---|---|---|---|
| 9 | Gather and prep supplies | Pay attention to delivery estimates | | |
| 9 | Setup your notebook for data | What variables/data do you need? | | |

*Consider using a chart like this to collect data in your notebook for your experiment*

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### Conducting Experiment Trials

| Trial # | Independent Variable | Observations / Notes | Measurement (Dependent Variable) | Explanation | Teacher Check |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

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| Week | Task | Details / Notes | Due Date | Teacher Check |
|---|---|---|---|---|
| 10-11 | Collect Data, test, modify, adjust | Big changes to protocol may need to be re-approved | | |
| 11 | Perform initial analysis | Run tests again if possible, at least 3 times | | |

| | | | | |
|---|---|---|---|---|
| 12 | Once you have the info you need, clean-up | Dispose of materials required; Reflect on what you learned in your notebook | | |

## Step 4: Prepare for the Fair

| Week | Task | Details / Notes | Due Date | Teacher Check |
|---|---|---|---|---|
| 13 | Finalize your data analysis | Visualize in graphs and charts | | |
| 14 | Draft your research paper | Aim for approx 5 pages | | |
| 15 | Create a mock-up of your project display | What's the MOST IMPORTANT to include | | |
| 16 | Practice Oral Presentation | Speak slow and steady, show engagement | | |
| 17 | Finalize all materials based on feedback | You're ready for the Fair! | | |