STEM FAIR 21-22

WILLIAMS MIDDLE MAGNET

WINNER

BEST OF FAIR: 2020, 2019, 2018, 2017, 2016, 2015

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What is it?

- Inquiry based project that encourages the use of the scientific process to develop a solution to a **global problem**

- Students will:
  - Develop an original idea based on a well researched real world problem
  - Develop a research plan including designing an scientific investigation
  - Keep a log book (folder) of their work and findings
  - Carry out their scientific investigation
  - Analyze their data
  - Choose a product to share their findings

Why?

- Addresses Nature of Science State Standards
- Students develop a sense of global awareness and scientific understanding
- Experience how scientists think and act in real world situations
- Experience the IB design cycle

Potential Products

- App
- Working model
- STEM Fair Entry board (If project is competition worthy)
- Multi-media presentation
- Student choice with teacher approval

•Who?

- Motivated students who have CHOSEN to do a project.
- All students will be ASKED to come up with a testable question (the foundation of a project). They can then follow through if they choose.

Where?

- At home; not at school
- Science teachers are available for consultation, project approval and follow up questions
- Proper planning ensures a smooth Thanksgiving break…

IB Criteria

- **Criterion A: Inquiring and analyzing**
  - explain and justify the need for a solution to a problem
    state and prioritize the main points of research needed to develop a solution to the problem
    present the main findings of relevant research.

- **Criterion B: Developing ideas**
  - develop a list of success criteria for the solution
  - present feasible design ideas, which can be correctly interpreted by others
  - present the chosen design
    create a planning drawing/diagram which outlines the main details for making the chosen solution.

- **Criterion C: Creating a solution**
  - outline a plan, which considers the use of resources and time, sufficient for peers to be able to follow to create the solution
  - demonstrate excellent technical skills when making the solution
  - follow the plan to create the solution, which functions as intended list the changes made to the chosen design and plan when making the solution
  - present the solution as a whole.

- **Criterion D: Evaluating**
  - outline simple, relevant testing methods, which generate data, to measure the success of the solution
  - outline the success of the solution against the design specification
  - outline how the solution could be improved
  - outline the impact of the solution on the client/target audience.

Important Points

- Needs to be an **original project**
- No pairs or groups
- Needs to address a real world problem
- Needs to be able to collect qualitative or quantitative data
- Materials for project are accessible
- **NO** chemicals, bacteria, bodily fluids, mold
- humans (psychologist required) or vertebrate animals (veterinarian required)
- You MAY NOT copy an experiment from the internet or from previous years. It will not be accepted.

When will my child get help?

- Email/Canvas
  - primary form of communication
  - Project pieces will be submitted via Canvas
  - Specific after school days TBA

NOTE: Checkpoints will be given to students to keep on track

FINAL PROJECT DUE DECEMBER 2nd

zfairs

- Hillsborough requires students to register at hillsborough.zfairs.com
- You must register once your child's topic has been approved their teacher
  - All fields can be edited later if needed
- Paperwork cannot be completed until the research plan has been uploaded and approved by the district
  - Note: Adult sponsor is your child's teacher
  - Research plan template available if needed
- Final project and paperwork approval comes through zfairs

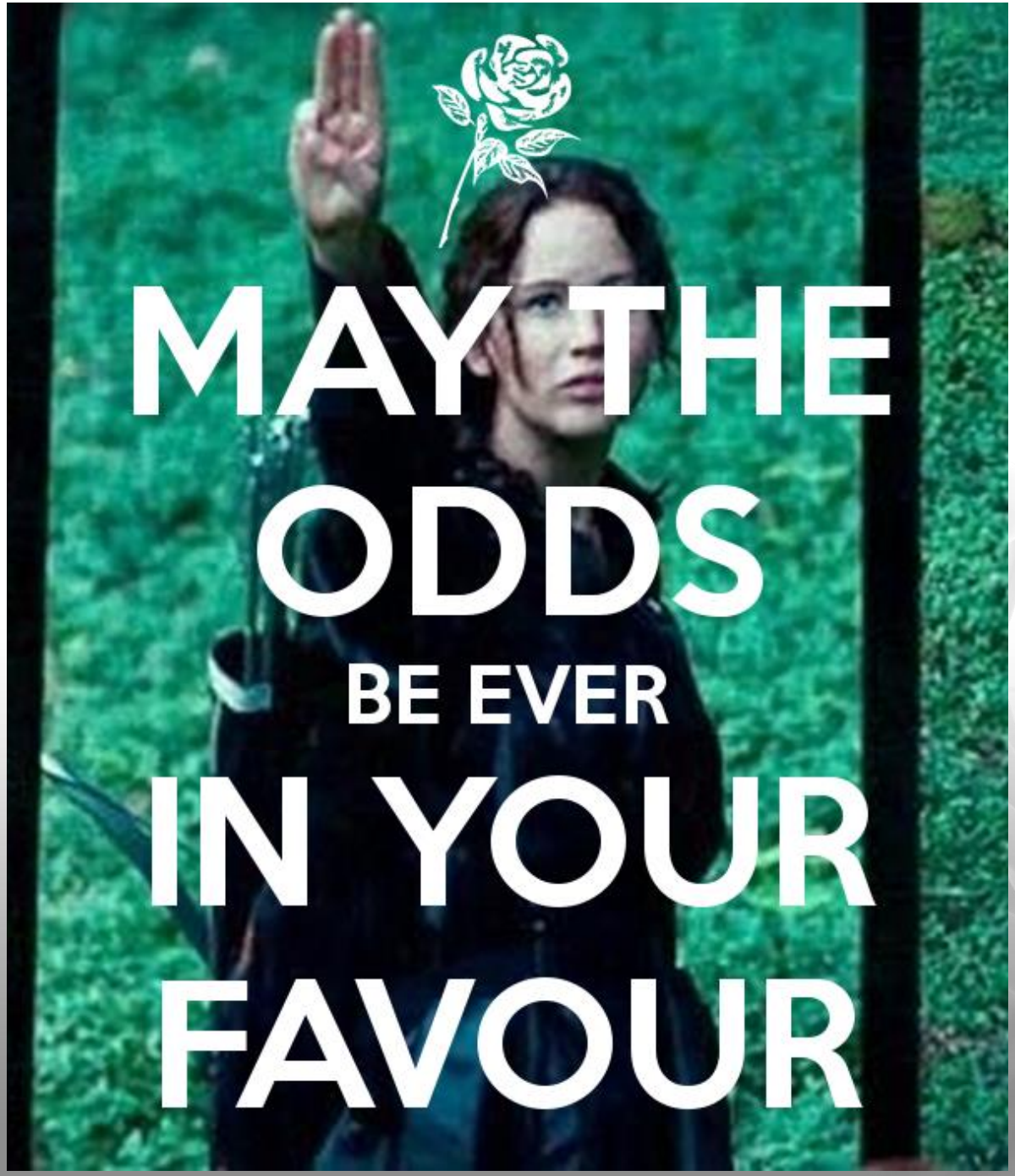
ALL OF THIS MUST BE DONE PRIOR TO EXPERIMENTATION

What will be needed?

- Two pocket three prong folder
- Looseleaf paper
- Access to a Color Printer
  - All documents must be typed (exception: Log is hand written)
  - Graphs need to be computer generated and in color
- Access to computer program(s) that can create graphs, charts, and data tables

When is STEM Fair?

- PROJECT DUE by December 2, 2021
- School Wide: December 3-5, 2016
- Regional: February (TBA) at the Tampa Convention Center
- States: TBA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