MESA DAY CONTEST RULES 2025-2026
(DRAFT)

AI for Social Good (PILOT)

LEVEL: Middle School

DIVISION(S): Grades 6-8 (combined)

COMPOSITION OF TEAM: 2-3 students per team

NUMBER OF TEAMS: Preliminary – Determined by your local MESA center
Regional – NO regional events

SPONSORS: UC Davis MESA College Prep
UC San Francisco MESA College Prep

OVERVIEW: **AI For Social Good** invites middle school students to explore artificial intelligence through a hands-on activity by training and testing a Google's Teachable Machine.

PROMPT: For this year's challenge, teams will train an image classification model to identify the primary macronutrient—carbohydrate, protein, or fat—in different foods. After submitting their model, teams will test it live at MESA Day by classifying a set of mystery food items. This challenge promotes critical thinking about nutrition, data bias, and the real-world applications of AI for social good.†

MATERIALS: The Host Center will provide the following during competition day:

- Internet access
- Competition devices with camera and internet access
- 12 standardized mystery food items (plastic, real, or printed)

- Provided by teams
  - Laptop or Chromebook with internet access
  - Google Chrome or other modern web browser
  - Email account
  - Access to Teachable Machine website
  - Saved image files of food items (collected by students for training AI model)
  - Submitted Teachable Machine model (hosted on Google Drive or similar)

GENERAL RULES:

1. **Team Composition**: Teams must consist of 2-3 students. Teams are not allowed to receive outside assistance from coaches, advisors, or other third parties once the competition begins.

2. **Competition Format**: The challenge will be conducted in two parts, pre-competition period and competition day.
    a. **During the pre-competition period teams will:**
        i. Complete a data science codeHS course (see link on Page 4).
        ii. Train an AI model using Teachable Machine to classify food items by their primary macronutrient: 1) mainly Protein, 2) mainly Carbohydrates, or 3) mainly Fats.
        iii. Collect image data for each macronutrient category (minimum of 8 images per above classifications). Students that do not meet category minimums **WILL NOT BE** eligible to compete.
            1. Images must be of a prepared dish:
                a. **Acceptable**: Cooked Chicken (baked, fried, etc.)
                b. **Not Acceptable**: Raw Chicken
        iv. Test their model using Teachable Machine's preview tool.
            1. Teams are encouraged to spend approximately 10–15 hours on training and testing their model prior to the event
        v. Submit the trained model link via Google Drive by the designated deadline.
            1. Teams that do not submit a trained model by the deadline (TBD by host center) will **NOT BE** eligible to compete.
    b. **During competition day:**
        i. Each team's submitted model will be tested live by a proctor using a standardized set of mystery food items.
        ii. The model will be loaded onto a device at a testing station and evaluated for accuracy.
        iii. Pretrained models not created by the team **ARE NOT ALLOWED.**
        iv. Teams are **NOT PERMITTED** to edit their Teachable Machine after submission.

JUDGING:

1) Each team's AI model will be tested live at a designated station during the competition.
2) The order of each team's testing will be randomly selected.
3) A proctor will present a standardized set of 12 mystery food items (4 carbs, 4 proteins, and 4 fats).
4) For each item, the team's model will be used to predict whether it is primarily a carbohydrate, protein, or fat.
5) Each team's model will be given a maximum of 3 minutes to test mystery food items. Teams will not be awarded points after the 3 minute period.

SCORING:

1) Teams will earn **1 point for each correct classification**.
2) Scoring Thresholds:
    a) To receive a point for any given item, the model's prediction must meet a minimum confidence threshold of **70% or higher** for that classification.
3) The maximum possible score is equal to the total number of items presented.
4) **TIEBREAKER:** In the event of a tie, teams will be ranked by **efficiency score**, calculated as:
    a) **Efficiency Score = Number of Correct Predictions ÷ Quantity of Images Used to Train Models**
    b) The team with the higher efficiency score (i.e. model with least quantity of images) will be ranked above the other tied team(s).

AWARDS:

- Awards will be given based on the highest number of total correct predictions.
- Medals will be awarded for 1st, 2nd, and 3rd place.
- This pilot competition concludes at preliminary events and will not move on to regional events.

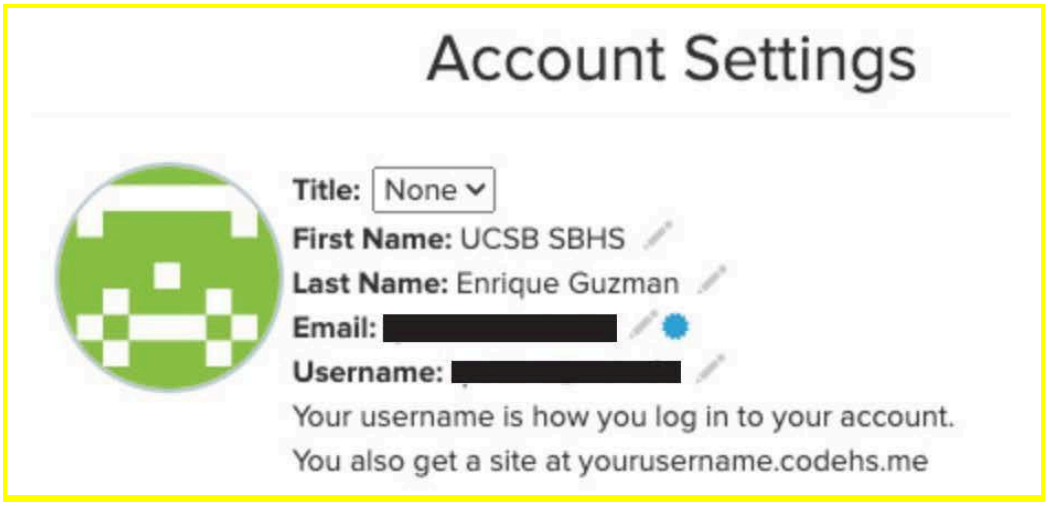
ATTACHMENTS/APPENDIX:

- AI for Social Good course in CodeHS Course.
- Scoring Rubric

AI for Social Good CodeHS Course

Enrolling Instructions: When enrolling in CodeHS, EACH team member **MUST** include their **MESA CENTER and SCHOOL** in their registration. See below for example:

- **First name field:** Abbreviated MESA Center and School Name
- **Last name field:** Student's First and Last Name



Course Links: Courses have been created to match the MESA region your host center is affiliated with. Please register for your appropriate course:

Northern California: For students affiliated with CSU East Bay, RISE, UC Davis, UCSF, Ukiah
Northern Region: https://codehs.com/go/C668A
Enrollment Code: C668A

Central California: For students affiliated with Fresno State, San Jose State, UCSC, University of the Pacific
Central Region: https://codehs.com/go/92215
Enrollment Code: 92215

Los Angeles / Central Coast: For students affiliated with CSULA, CSULB, UCLA, UCSB, USC
LA/Central Coast Region: https://codehs.com/go/05B97
Enrollment Code: 05B97

Southern California: For students affiliated with Imperial Valley, San Diego State, UCI, UCR
Southern Region: https://codehs.com/go/F9EAE
Enrollment Code: F9EAE

SCORE SHEET FOR AI For SOCIAL GOOD

Middle School – Grades 6-8

Copies of this score sheet will be provided by the MESA Day Host Center.

Student Names: _____ MESA Center: _____

School: _____ **Grade** 6th, 7/8th*(circle one)*

TEST ITEM	CONFIDENCE ≥ 70%?		POINTS AWARDED	
1.	□ Yes	□ No	□ 1	□ 0
2.	□ Yes	□ No	□ 1	□ 0
3.	□ Yes	□ No	□ 1	□ 0
4.	□ Yes	□ No	□ 1	□ 0
5.	□ Yes	□ No	□ 1	□ 0
6.	□ Yes	□ No	□ 1	□ 0
7.	□ Yes	□ No	□ 1	□ 0
8.	□ Yes	□ No	□ 1	□ 0
9.	□ Yes	□ No	□ 1	□ 0
10.	□ Yes	□ No	□ 1	□ 0
11.	□ Yes	□ No	□ 1	□ 0
12.	□ Yes	□ No	□ 1	□ 0
			TOTAL CORRECT PREDICTIONS _____ *(DO NOT AWARD POINTS FOR ANY PREDICTIONS BELOW 70%)*	
IMAGE COUNT (TIEBREAKER INPUT)_____	**Tiebreaker: Image Count_____÷ Correct Predictions_____=_____** *(Efficiency Score = Correct Predictions ÷ Number of Images Used to Train Model.)*			