Teaching Lesson Challenge 2019
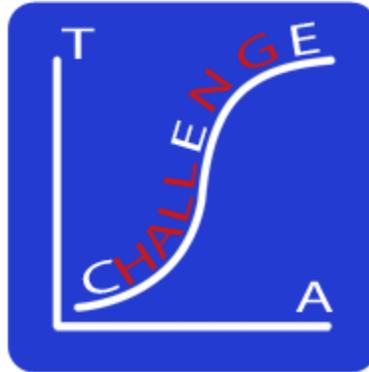

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Challenge Description

Theme: Impacts of Technology on the Environment
Your challenge is to develop a lesson plan for a 45-minute class of which you will deliver a 15-minute lesson segment. Your lesson should address the impacts of technology on the environment and be appropriate for a grade level of your choice between grades 6-12. Be sure to engage the students during your lesson using some kind of activity or active teaching strategy that will reinforce the concepts and/or vocabulary appropriate to the grade level and theme. The lesson plan should clearly identify the activity or teaching strategies used.

- Lesson should be a 'live' interactive teaching moment.
- Items to be evaluated include:
    - Lesson plan (submitted in advance per timeline).
    - Student support materials (instructional materials) and supplies related to the theme and/or lesson.
    - The lesson delivery, including integration of all developed instructional materials.
    - A post-lesson reflection.

Standards and Benchmarks

International Technology and Engineering Educators Association (ITEEA)

- Standards for Technological Literacy
  The lesson plan developed by the student/team is expected to clearly identify all of the standards and benchmarks from ITEEA's *Standards for Technological Literacy* being addressed in the 45-minute lesson.

The student/team may want to identify standards from other areas as well. Some options include the Next Generation Science Standards and Common Core Standards.

Next Generation Science Standards (NGSS)
Common Core State Standards Initiative

Knowledge and Skills

- **Lesson Planning**
- **Development and Distribution of Student Support Materials**
- **Classroom Management**
- **Lesson Delivery**
- **Reflective Practice**

Procedures and Timeline

- **September:** Obtain event guide, theme, and rubric
- **October:** Plan lesson, gather supplies, practice classroom management and lesson delivery skills and techniques
- **November:** Finalize plan, support materials, and supplies; practice classroom management and lesson delivery skills and techniques
  - All planning is to be completed prior to the conference. A formal lesson plan (in a format of your own design) must be submitted to the Event Coordinator at tmaiseroulle@vikingnet.net by midnight **on November 9, 2019.**

Rules and Constraints

1. All students must "check in" at a designated time and place to be scheduled for their teaching performance.
2. The lesson should be a "live", interactive teaching moment. It may be video recorded, but only for instructional purposes. The teams are encouraged to record their own lessons.
3. The student or team will be teaching the team of judges who will "play" the role of the members of a typical technology and engineering education class (therefore, plan on a maximum of six judges at any contest site).
4. All planning is to be completed prior to the conference (**see due date in Procedures and Timeline section**).

5. Each formal teaching segment should be designed for a maximum delivery period of 15 minutes.
   a. Lessons extending over 15 minutes will incur penalty points of -5 points per 15 second interval over 15 minutes.
   b. Lessons under 12 minutes will also incur a penalty of -5 points per 15 second interval under 12 minutes.
   c. Lessons that continue beyond 20 minutes will be stopped.
6. Remember your lesson plan is covering the full 45 minutes of the class even though you are only delivering 15 minutes of the entire lesson. A brief explanation to the judges about what section is being delivered is expected.
7. Formal lesson plans should minimally include target audience, standards, objectives, content, procedures (including active teaching strategies), instructional aids or resources, and assessment for the 45-minute lesson.
8. The total cost for developing the lesson should not be excessive. Excessive means spending over $25 for supplies excluding the use of a laptop and projector.
9. Students and teams are responsible for their own media requirements for the contest. **Note:** You may plan on a large, white screen being available at each competition site, but other items are the team's responsibility (i.e., laptop, projector)!
10. A setup time of 5 minutes is provided prior to starting the scheduled lesson segment. Note: Exceeding set–up time will also incur penalty points.
11. Video recorded segments or portions of commercial tapes may be used, but should not exceed two minutes in length.
12. Items for lesson delivery may include, but are not limited to:

. A formal lesson plan, which was submitted and evaluated ahead of time. **Note:** No changes to the lesson plan should occur after November 9. The submitted lesson plan is the only one that will be used and evaluated.

a. Student support materials (provide six copies).

b. Additional materials or supplies related to the lesson as needed.

c. Reflection on the overall delivery of the lesson segment (strengths and weaknesses). This reflection must be completed immediately following the lesson delivery. The reflection should be submitted to the judges within 60 minutes following the lesson to the location announced by the judges.

d. **Note:** If teaching aids are to be used, plan on a maximum of six students (i.e., judges) who represent the "class" of students.

13. The lesson must not create a hazardous situation.
14. The TEECA lesson plan, all developed instructional materials, lesson delivery, and reflection will be reviewed by the judges.

Equipment and Materials

Team

1. Lesson Plan
2. Student Support Materials
3. Additional equipment and supplies (as needed and determined by the team)
4. Lesson Reflection

Event Coordinator

1. Event Guide
2. Scoring Rubric
3. Writing Utensils
4. Additional equipment and supplies (as needed and determined by the coordinator)

Evaluation and Judging

Lesson Plan: Effectiveness, Developmental Appropriateness, Accuracy, Thoroughness, and Creativity

Student Support Materials and Supplies: Age Appropriateness, Effectiveness, Thoroughness, and Quality

Lesson Delivery: Effectiveness, Consistency with Lesson Plan, Clarity, Pacing/Flow, and Classroom Management (Use of support materials & engagement of learners), and Thoroughness

Lesson Reflection: Effectiveness, Clarity, and Thoroughness

Evaluation Rubric

Learning and Resources

Content Related

- **https://tsaweb.org/**
- **https://www.skillsusa.org/**
- **https://www.firstinspires.org/robotics/frc**
- **http://www.bestinc.org/**
- **https://www.soinc.org/**

Teaching Related

- [Danielson Framework for Teaching](#) presents detailed evaluation guidelines on 22 components of teaching in four domains including planning & preparation, classroom environment, instruction, and professional responsibilities.

- [The Khan Academy](#) is a good place to seek out examples of how content can be scaffolded and presented in a clear, logical manner.

- [Michigan State University's Secondary Education Program](#) presents some good questions and guidance about lesson planning

- [The Teaching Channel](#) has many inspirational teaching videos to learn best practices.

References

American Society for Engineering Education: http://www.asee.org/

International Technology and Engineering Educators Association: http://www.iteea.org

International Technology and Engineering Educators Association (2007). *Standards for technological literacy: Content for the study of technology*. Reston, VA: Author. Retrieved October 6, 2013, from http://www.iteea.org/TAA/Publications/TAA_Publications.html