Instructional Common Core Aligned Lesson Plan Template

All formally evaluated teachers need to provide detailed information about the content and procedures used to teach a single lesson. All areas are addressed as part of planning and preparing for teaching.

Teacher: Matt Benrus

Primary Subject Area and Grade Level: 5 & 7 Art, 6 & 8 STEM

Date: *11/9/22*

Lesson Topic/Content:

PLTW Automation and Robotics Lesson 1.2 - What Do We Use Robots For?

Essential Questions: *One that lies at the heart of a subject or a curriculum & promotes inquiry & uncoverage of a subject.*

- *Example: "What is justice?"*
  A key inquiry within a subject:
- *Example: "What is healthy eating?"*
  When it helps students make sense:
- *Example: "How do the best writers hook and hold their readers?"*

BIG IDEAS & MEANINGFUL CONNECTIONS!

What do we use robots for?
What human functions and tasks are robots being used for? What might they be used for in the future?
What are the ethical concerns of using robots to perform human tasks/functions instead of humans?
What are the advantages and disadvantages of using robots for human/tasks functions?

Pre-class Activity/ Bell work:

What activity will students be working on upon entering the classroom?

Students will complete the bellwork google form with a couple of questions about yesterday's activity.

Review:

How will today's lesson tie in to previous lessons?

It will not - this is a new lesson that starts with today's activities.

Approximate Duration:

Two 45 minute class periods for the research handout, two 45 minute class periods for creating the infographic, and one 45 minute class period for presentations of the material.

Class Information:

Describe any unique characteristics of the class (consider: special needs, resources, ESL, etc.)

There are four students receiving services in this group, though I don't estimate that they will need differentiated instruction for this lesson/project..
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Danielson, 1b

Common Core Learning Standard(s) Addressed:

Instructional Information on the Illinois Learning Standards may be obtained by following these steps:

1. http://www.isbe.state.il.us/ils/
2. Curriculum/Standards tab
3. Grade Level Expectations or Common Core State Standards

Danielson, 1c

CCSS.ELA-LITERACY.CCRA.R.1, W.2, W.4, W.8, W.9, SL.1, SL.2, SL.4, SL.6
CCSS.ELA-LITERACY.RST.6-8.1, 6-8.4, 6-8.7, 6-8.8, 6-8.10
CCSS.ELA-LITERACY.WHST.6-8.2.d, 6-8.6, 6-8.7, 6-8.8, 6-8.9

CCSS.ELA-LITERACY.RL.8.1, RI.8.1, W.8.1.b, W.8.2, W.8.2.a, W.8.2.b, W.8.2.d, W.8.3.d, W.8.4, W.8.5, W.8.6, W.8.7, W.8.8, W.8.9
CCSS.ELA-LITERACY.SL.8.1, SL.8.1.a, SL.8.1.b, SL.8.1.c, SL.8.1.d, SL.8.5, SL.8.6
STEL-1L, 2R, 4K, 6C
K12CSF.P2.CAC.1, P2.CAC.2, P2.CAC.3, P2.CAC.4
NGSS.P6, P7, P8, Scientific Knowledge is based on Empirical Evidence, Science knowledge is based upon logical and conceptual connections between evidence and explanations, Scientific explanations are subject to revision and improvement in light of new evidence.

Overview:

Provide a brief, but complete, overview of the lesson. The overview should provide the reader with a description of the lesson's content and relationship to the Illinois Content Standards/ Common Core State Standards. How does this lesson support the state content standards?

The lesson spans a few days of class time. The observed lesson is the introduction to a short research project about a robot, chosen from a curated list that will start students off at robots.ieee.org. Students will perform reading, writing, research, production and presentation tasks. Lessons 1 & 2 will cover the research portion, students will apply their research to the creation of an infographic in lessons 3 & 4, and lesson 5 will give the students an opportunity to present their work to the class. The project from start to finish hits many CCSS in writing, speaking and listening, and reading informational texts.

Danielson, 1c

Interdisciplinary Connections:

Provide a listing of the subject area(s), (minimum of one) in addition to the primary subject area that is incorporated in this lesson. CCSS is required for each additional content area being addressed.

Grammar and Writing - See CCSS listed in the above section
Fine Arts - Specifically VA.Cr.2.3.8.a. Select, organize, and design images and words to make visually clear and compelling presentations.

Educational Technology Standards:

All lesson plans should be linked to Educational Technology Standards may be located at:
http://www.iste.org/standards/iste-standards

ISTE.DC.2b, 2c
ISTE.KC.3a, 3b, 3c, 3d
ISTE.CC.6c
ISTE.GC.7c

I Can Statements:

Explaining intended learning targets in student-friendly terms so that students can assess their own learning or set goals to work towards.

I can understand and describe how my chosen robot performs human tasks/functions
I can research, write about and explain the different features/abilities of my robot including: work envelope, end effector, industry, ethical concerns and current uses
I can synthesize and apply my knowledge of the robot to the creation of an infographic that combines my written research with visual information
I can present the results of my research to the class, including being able to answer relevant questions

Technologies and Other Materials /Resources:

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web resources: robots.ieee.org, other sites as chosen by the students, canva.com

Activities/Tasks (Lesson Procedure):

Enter the lesson procedures using numbered bullets. The procedures should clearly describe the sequence of learning activities and should identify where and how all materials, technology tools and student-created technology products, and reproducible materials/handouts are utilized in the lesson. Be very precise when explaining the teacher and student tasks during the learning activities.

Danielson, 1e, 2c, 3c, 3b

Lesson Procedure:

- □ ***DAYS 1 & 2***
- □ *The teacher will* begin the lesson by giving a brief explanation of what the students will be doing over the next few lessons
- □ *The teacher will* project the research handout and go over each question, including an explanation of terms and vocabulary where needed, as well as the expectation that information students add to the handout is to be in their own words, not copy/pasted from their web resources.
- □ *The teacher will* connect the handout to the production of the infographic in the following lessons, including a brief display of teacher and student examples so that students can see the end goal
- □ *The students will* use the curated list of robots from robots.ieee.org to browse different automated robots and decide on one to research based on their own interests.
- □ *The students will* use the information at robots.ieee.org as well as at least two other websites to answer the relevant questions in the research handout
- □ ***DAYS 3 & 4***
- □ *The teacher will* give a more in-depth introduction to the infographic portion of the project, including a demonstration of how to find templates on canva.com and some production basics (all students have used canva at this point so a deeper explanation is likely unnecessary).
- □ *The teacher will* share the rubric for the project and answer any questions about it
- □ *The students will* begin production of a visually interesting infographic for their robot
- □ **DAY 5**
- □ *The students will* present their infographics to the class.

Relevance/Rationale:

(Connect to prior learning) Why are these outcomes important in the real world? Why are these outcomes essential for future learning? How do they relate to prior learning?

The connections for this project are going to be from previous learning almost entirely. Research, writing and presenting are all skills these students have used before and will use again. However, these skills are going to be applicable throughout the rest of middle school, into high school and beyond. The understanding of different robots and robotic systems will also factor into the remainder of the trimester, especially as the students begin to design systems that will perform specific tasks.

Explorations and Extensions:

1. *EXPLORATION: Briefly list and describe activities/learning opportunities that might be used by individual students to **expand** the understanding of concepts or development of skills introduced in the lesson. **State what** early finishers **will do upon completion of work.***

Students who finish early will be encouraged to add to their infographics by adding a second page that adds more detail to the information presented on the first, or adding more images or embedded video that shows their robot in action.

2. *EXTENSIONS: Briefly list/describe what will be done to **re-teach** this lesson to those that are not successful with independent activity.*

Reteaching in this case will mostly be done on an individual basis. I don't anticipate the necessity for this since I will review students handouts before letting them move onto the canva infographic, and will review their infographic to approve them for presentation. Since I will have pretty heavy involvement at specific checkpoints, I think most students will succeed from the beginning. If there are students that need to flesh out information, I will be able to encourage that during the post-research check in.

Danielson,1a

Assessment Criteria for Success:

Content knowledge, student knowledge, and appropriate resources aligned to instructional outcomes.

- *How will you assess student learning throughout the lesson (formative)?*
- *How will you and your students know if they have successfully met the outcomes?*
- *What specific criteria will be met in a successful product/process?*
- *What does success on this lesson's outcomes look like?*
- *Describe any (summative) assessments to be used if applicable*

Students will receive a daily participation grade for the research handout. Projects will be graded with a rubric which is attached along with my other documentation on google classroom. The rubric should answer the last four questions in this list. Formative assessment will occur at the two checkpoints (post research, post infographic) and also on a daily basis as I move around the room.

Danielson, 1f, 3d

Modifications/Accommodations and Access for All:

*What curriculum modifications and/or classroom accommodations will you make for students with disabilities in your class? (**be specific)***
How will you ensure that all students have access to and are able to engage appropriately in this lesson?(consider all aspects of student diversity)

I don't anticipate the need for modifications for this group, but I will make adjustments as necessary for students that need extended time or help with writing.

Danielson, 1c, 3e

Reflections:

*Use this component to provide any insights you gained after teaching the lesson to your students. LIST at least three (3) questions you will ask yourself **after** the lesson is taught.*

DId I do a good enough job of explaining the specific vocabulary for the lesson?
Do students have a good understanding that this is the foundation for their project and that thorough work now will make the project itself easier to complete?
Are students completing the research portion appropriately, with accurate information?

Danielson, 4a, 4e