Middle-level CTE Learning Experience Title: Robot Winter Olympics Educator: Tonya Lackey, Westport Centre (p)2.3 :SM:

	a) Investigate knowledge, skills, and practices needed for a career in the communications and human services fields			
	Abilities for a Technological World 2. Use and Maintain Technological Products and Systems Students will a) Use information resources, manuals, documents, or experienced people to describe how systems work c) Utilize computer and information resources to operate and maintain a system 3. Assess the Impact of Products and Systems Students will a) Utilize instruments to measure and gather data b) Identify trends or patterns in data to be applied toward decision making and identify positive and negative effects of technologies c) Interpret and evaluate accuracy of information to determine the quality of products and systems			
Vocabulary	Thinking, Engineering Design Cycle, Redesign, Testing	Content Computer Programmer, Program, Code, Algorithm, Pseudocode, Efficiency, Robot, Comments, Inputs, Outputs, Commands, Sequence, Electric Motor, Rotational Sensor, Accuracy, Speed, Computer, Sensors		
Materials and Resources	Age appropriate educational robotics system and compatible Materials for Olympic sport events: Curling target, Bobsled construction paper (Day 1 - 11) Devices wy 1)ppp .7 (o)-9y.7 (o)p237Tw w(p)2(0)-1p0	ole programming device (Day 1 - 11) I track, Biathlon target including plastic cups, popsicle sticks,		

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	who writes code to control a robot?		
Do-now/Hook	Day 1 (cont.) Show clips from the Winter Olympics of curling, slalom, biathlon, and bobsled.https://www.olympic.org/v ideos/pyeongchang-2018Discuss Olympic athlete preparation practices. Describe what a computer programmer does.	Day 1 (cont.) Students watch the videos taking notes as to what each event is and how to complete the task. Take notes	

description of event and rules)

Lead class discussion to create a list of questions to be researched. (i.e. What information do

Idea/Plan of the three your group created last class.

Give students suggestions and options on how to build the robot, adding motors and sensors to build a contraption for the robot to compete in the Olympic game. Help students write an algorithm for their Olympic sport and then transfer it to the programming language.

Help each group stay on task and

Help each group stay on task and make appropriate progress toward the end goal.

Day 8-9

Present the goal: Test and refine your program and robot on course:

Just as an Olympic athlete would practice.

Just as an engineer builds a prototype and tests in order to tweak a design to make it better.

Help each group stay on task and make appropriate progress toward the end goal.

Day 10-11 Competition Day Prior to class set-up an area for each Olympic Event. Invite the school to be the audience. Organize a time, if possible, to have all the students compete at the same time. If possible gather other adults to act as event judges.

Congratulate the students for

Students work in groups to build and write a program for the robot to compete in Olympic game of their choice. The student athletes

will use sensors (the Or Tolf(t) Tigit (t) 106 (4 of Tolf(t) 107 (



Writes Clearly

correct grammar, and understands the intended audience of documents that are produced.

Consistently writes clearly, uses Writes clearly, generally using correct grammar, and understands the intended audience of the document produced.

Produces a document that is mostly well written but, sometimes uses incorrect grammar; shows general understanding of the intended audience.

Produces a document that is

Shows Willingness to Take Risks

Embraces the idea that important part of success and approaches opportunities with an understanding that failed attempts are likely.

Understands that attempting/experimenting is an important part of success and attempting/experimenting is an important specific an important specific and important specific and