School of Education & Humanities

LESSON PLAN

UNIT CODE: **PE402**

Student Teacher	Lilliana Stojanoski	**Date**	10.10.16
Learning Area	Design and Technologies	**Year Level**	7
Curricular Intention/s (Content descriptors)	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment (ACTDEK034)	**Duration (minutes)**	70 min.

Enduring Understandings (including Values Understandings)

Students will understand how the features of technologies such as 3D modelling and printing influence design and production decisions.

Learning Goals (Know (i), Do (ii), Value (iii)):	Essential Questions (EQ):	Evidence of Understanding:
Students will: (i) **Learn** the principles of 3D design and printing using Autodesk Inventor and a 3D printer (ii) **Develop** their own designs using the Autodesk Inventor and print them using a 3D printer (iii) **Appreciate** the 3D features of technologies and an impact they have on design and production decisions.	(i) What is 3D modelling? What is 3D printing? (ii) What are the benefits of 3D design and 3D printing? (iii) How has 3D printing changed design and production in general? What are some specific examples? Is it a change 'for the better'?	Class discussions, photos and other record of students' work, teacher notes.

Pre-Lesson Organisation

ENSURE ALL COMPUTERS ARE SET-UP AND READY FOR STUDENTS. ENSURE ALL STUDENTS HAVE WORKING VERSION OF INVENTOR. TEACHER'S DEVICE CONNECTED TO SMART TV FOR THE PRESENTATION.

Learning Phases & Timing	LG (code)	Learning Experiences including Teaching Strategies and Essential Questions	Differentiation/Assessment Strategies	Resources & Organisation for Learning
ENGAGE (APPROX. 10 MIN)		Students lined up and quiet outside the classroom – invited to come in. Mark the roll. Teacher to revise the previous lesson. Teacher will ask about homework: who has done the work, what have they completed, what have they struggled with, help find the relevant information and fill in the sheets together (approx. 10 min at the most). Homework reminder – continue filling out the worksheets. Explain what students will be working on (lesson goals) and introduce the project (key-tag); Introduce Inventor. program. Students asked to have their Inventor program opened and to begin working. Teacher will provide instruction simultaneously to ensure all students are completing the work and going at the same pace (no one left behind). Teacher projecting all Inventor work on smart TV screen. **EQ (i): What is 3D modeling? What are the benefits of 3D design?**	Class discussion	Teacher's and students' computers, screen, projector
EXPLORE (APPROX. 50 MIN)		Introduce simple Inventor tools through creating a 3D smiley face Other basic functions explained like extruding basic geometric shapes and adding text 'I do, we do, you do' instruction model used as well as individual work with students and step-by-	*Video with instructions created by the teacher provided for students' further use and*	Students' laptops for to work on, students' own USB sticks, teacher's

Learning Phases & Timing	LG (code)	Learning Experiences including Teaching Strategies and Essential Questions	Differentiation/Assessment Strategies	Resources & Organisation for Learning
		step explanations Teacher demonstrations. Students will begin working on their key tag designs. Teacher to walk through the classroom and check with each individual student on their progress and help where needed.	*reference*	laptop.
REVIEW & CONCLUDE (APPROX. 10 MIN)		Students will be given an opportunity to ask questions, reminded to save their work to their USB and close the program, turn off the computer. **EQ (iii) How has 3D printing changed design and production in general? What are some specific examples? Is it a change 'for the better'? Advantages? Disadvantages?**	Clarifications/explanations by teacher as needed; Class Discussion: (higher order thinking developed as students will evaluate the learned content and critically appraise the implication 3D design and print has on design and other industries, economy, copyright laws etc.).	

Post-Lesson Organisation

Critical reflection about…		
Planning	**Implementation**	**Student learning**
As no work on Inventor was covered during the previous lesson, this lesson will be largely based on this. Students will be creating their key tags and simultaneously learning how to use inventor.		Student learning will be evident in their work (worksheets and the project).

Supervising teacher's evaluative feedback

***Now What?**

*(Based on Rolfe et al's Reflective Model, 2001)