Use the following completed six-page template as a guide as you design your UbD units.

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| Unit Cover Page |

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| **Unit Title:** | To Sit or Not to Sit | | | | | | **Grade Level:** | | K-5 |
| **Subject/ Topic Awareness:** | | | | Furniture Design—STEAM | | | | | |
| **Key Words:** | | Design Process, industrial design, furniture, additive, subtractive, model/prototype, measurement (units-inches and millimeters), scale, ergonomic | | | | | | | |
| **Designed By:** | | C. Bryant | | | | | **Time Frame:** | 2 weeks | |
| **School District:** | | | Atlanta Public Schools | | **School:** | Drew Charter School | | | |
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| **Brief Summary of Unit (including curricular context and unit goals):** | | | | | | | | | | | | | | | |
| Students will learn about the design process (outlined by James Dyson of Dyson Vacuums in Great Britain). Students will receive a project brief to design (each student will create their own) a chair for the owner of one of two fictitious coffee shops. The teacher will take students to visit the chairs in the permanent collection at the High Museum, will show images of a variety of chairs, and or bring in some samples**.**  Students will learn about the job of an industrial designer and will learn about designing a product for a certain type of customer and for a certain user experience. Students will research chairs by studying examples, by examining books and conducting an image search. Students will learn about measurement and issues of scale as well as ergonomics. Students will document their own lived experiences with chairs. Students will learn about the importance of sketching their ideas, as they will “shop” their idea by sharing it with tablemates to see which design they liked best. Students will work with a partner to create a composite sketch. Next the partner group will create a prototype for the particular client’s desired user experience. Students will participate in evaluation processes at several intervals: sharing and receiving feedback on their sketches and peer critiques throughout the building process. A final evaluation of the design may be conducted by an imaginary or real coffee shop owner. | | | | | | | | | | | | | | | |
| **Unit Design Status:** | | | | | | | | | | | | | | | |
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|  |  | Completed Template (Stages 1, 2 and 3) | | | | | |  |  | Completed rubrics | | | | | |
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|  |  | Completed blueprint for each performance task | | | | | |  |  | Materials and resources listed | | | | | |
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|  |  | Directions to students and teachers | | | | | |  |  | Enrichment plan | | | | | |
|  | | | | | | | | | | | | | | | |
|  |  | Remediation plan | | | | | |  |  |  | | | | | |
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| **Status:** | | | | | | | | | | | | | | | |
| Initial Draft Date: | | |  | | | | Revised Draft Date: | | | | | |  | | |
|  | | | | | | | | | | | | | | | |
|  |  | Peer Reviewed | |  | Content Reviewed |  | Field Tested | | | |  | Validated | |  | Anchored |
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| Stage 1 – Identify Desired Results |

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| **Standards:** |
| **Science**  S1CS1, S1CS2, S1CS3, S1CS4, and S1CS5. |
| **Arts**  VA1C.1, VA1P R.3, VA1P R.2, VA1CU.1, VA1MC.2 and VA1MC.1 |
| **Math**  MCC1.MD.1, MCC1.MD.2, MCC1.G.1, and MCC1.G.2 |

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| **What essential questions will be considered?** |  | **What understandings are desired?** |
| What is the design process?  How does a designer communicate an idea?  How can we use design to enhance or detract from a user’s experience? |  | *Students will understand that…* |
| There is a process utilized for engineering design.  Research/ observation/ understanding a client’s needs helps an individual come up with a better stronger design.  Sketching ideas is important in communicating ideas to a group or even for selling an idea.  Creating a model/prototype is helpful in gaining a 3d understanding of an idea.  Evaluating effectiveness of ideas is important when designing and choosing the best solution.  Designers must think about: durability, shape, pattern, and function. |

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| **Objectives:** | | |
| **What key knowledge and skills will students acquire as a result of this unit?** | | |
| *Students will know…* |  | *Students will be able to…* |
| … the steps in the design process. …the importance of sketching ideas.  …the importance of research in design.  …the importance of creating a model.  …the importance of evaluating ideas to create outstanding solutions. | … conduct research/ observe/record needs of the client.  … complete a series of sketches that show their idea.  … create a model of their idea.  … present their idea to the class and sell to the community.  … utilize the design process. |

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| Stage 2 – Determine Acceptable Evidence |

**Assessment Task Blueprint *(Task 1)***

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| **What understandings or goals will be assessed through this task?** |

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| ***Students will know…*** |  |  |  |
| … the steps in the design process. …the importance of sketching ideas.  …the importance of research in design.  …the importance of creating a model.  …the importance of evaluating ideas to create outstanding solutions. |  |  | **Criteria** |
| **See attached rubric.** |
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| ***Students will …*** |  |  |
| … conduct research/ observe/record needs of the client.  … complete a series of sketches that show their idea.  … create a model of their idea.  … present their idea to the class.  … utilize the design process. |
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| **Through what authentic performance task will students demonstrate understanding?** |

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| **Task Overview:** |
| Students will learn about the design process (outlined by James Dyson of Dyson Vacuums in Great Britain). Students will receive a project brief to design (each student will create their own) a chair for the owner of one of two fictitious coffee shops. The teacher will take students to visit the chairs in the permanent collection at the High Museum, will show images of a variety of chairs, and or bring in some samples**.**  Students will learn about the job of an industrial designer and will learn about designing a product for a certain type of customer and for a certain user experience. Students will research chairs by studying examples, by examining books and conducting an image search. Students will learn about measurement and issues of scale as well as ergonomics. Students will document their own lived experiences with chairs. Students will learn about the importance of sketching their ideas, as they will “shop” their idea by sharing it with tablemates to see which design they liked best. Students will work with a partner to create a composite sketch. Next the partner group will create a prototype for the particular client’s desired user experience. Students will participate in evaluation processes at several intervals: sharing and receiving feedback on their sketches and peer critiques throughout the building process. A final evaluation of the design may be conducted by an imaginary or real coffee shop owner. |

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| **What student products and performance will provide evidence of desired understandings?** | | |
| Presentation, sketches, model, photographs |  | Student’s completed rubric |

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| **By what criteria will student products and performance be evaluated? (Rubric Dimensions)** | | |
| * **see attached rubric** |  |  |

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| **Student Self-Assessment, Reflection and Peer Critique:** |
| 1. Students will continuously receive feedback throughout the process from peers. 2. Students and clients will complete a rubric at the end of the unit. |

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| **What other evidence needs to be collected in light of Stage 1 Desired Results?** |

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| **Other Evidence (Minimum of 1 per week):** |
| **(e.g. tests, quizzes, writing prompts)** |
| Quizzes on measurement, the role of an industrial designer/ furniture designer, and the design process may be given.  Writing/ drawing assignments may be given to record observations or ideas. |
| **Please attach the tests, quizzes, and writing prompts to the Unit Plan.** |

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| Stage 3 – Plan Learning Experiences |

What sequence of teaching and learning experiences will equip students to engage with, develop, and demonstrate the desired understandings? Use the following sheet to list the key teaching and learning activities in sequence. Code each entry with the appropriate initials of the WHERETO elements.

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| WHERETO | |
| W | **Where** are the students in this class going? |
| **H** | How will I **hook** and **hold** my student’s imagination? |
| **E** | How will I **equip** all my students for success? |
| **R** | How will I encourage my students to be self-**reflective**, and self-evaluative? |
| **E** | How will I build into instruction opportunities for my students to self-**evaluate** & self-**express**? |
| **T** | How will I **tailor** my instruction to accommodate student’s strengths, needs, & learning gaps? |
| **O** | How will I **organize** the learning experience to maximize student understanding? |

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| **Use this chart to list the key teaching and learning activities in sequence.**  **Code each entry with the appropriate initials of the WHERETO elements.** | | |
| **Code:** | **Activity:** | |
| W | **1.** | Teacher will introduce lesson/tasks with the visit to the High Museum or by bringing in several sample chairs. The teacher should explain the need for industrial designers. Each student will be given the brief to design a seat for a specific type of coffee shop—with specific user needs. |
| H, E | **2.** | Examine and study (measure, understand scale, and comfort) of the sample chairs. |
| H, E | **3.** | Demonstrate how to sketch for industrial design and use prototyping materials.  Demonstrate the importance of measurement and scale in designing for human use. |
| E, 0 | **4.** | Teacher and students to discuss possibilities and give suggestions—provide feedback throughout. |
| E, T | **5.** | Students will evaluate themselves with the final rubric. |
| R | **7.** | Students will critique their work throughout the process. Students will photograph their process with digital cameras—recording evidence of their thought process. |

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| **Stage 3 – Plan Learning Experiences (continued)** |

**Consider the WHERETO elements.**

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| **Monday** | | **Tuesday** | | **Wednesday** | | **Thursday** | | **Friday** | |
| **Opening:** Teacher explains the brief. Teacher plays the video introduction to the two owners and their shops. | **1** | **Opening:** Have students pick the coffee shop they wish to design for and describe the owner’s needs and his customer’s needs. | **2** | **Opening:**  Have students explain why designers sketch their ideas. | **3** | **Opening**: Explain what materials you will use for your chair and how the material will enhance or detract from the user experience. | **4** | **Opening:** Students examine the work of other partner groups and provide half-way point feedback on the ideas/ model. | **5** |
| Teacher takes students to visit the High Museum to see the chairs in the permanent collection. Have students begin researching the chairs considering material, size, scale, durability and comfort. | | Students finish research. Teacher and students will discuss the importance of sketching in communicating a design idea. Teacher demonstrates 3-d sketching of chair ideas. Students create sketches and ask classmates for feedback. Students work to create improved sketches. | | Students will share their final sketches with a partner. Each partner in the group will decide on their best drawing and they will work together to form a composite sketch. Explain the idea of scale and the scale of the project. Demonstrate how to make create a scale model. | | Students will choose their materials and will create a scale model. | | Students complete their model and prepare a presentation to explain the ways they will meet the needs of their client. | |
| **Student Closing:** Have students describe what they learned on the trip. | | **Student Closing:** Which design do you like best? | | **Student Closing:** Explain the concept of scale. | | **Student Closing:** Students state what was challenging about the process. | | **Student Closing:** Students are given a quiz on the design process. | |
| **Opening:** Students prepare for their presentation. | **6** | **Opening:** What have you learned about design and human behavior? | **7** | **Opening:** | **8** | **Opening:** | **9** | **Opening:** | **10** |
| Students present their ideas to the class/coffee shop owner and receive feedback on their ideas. | | Students present their ideas to the class/coffee shop owner and receive feedback on their ideas. | |  | |  | |  | |
| **Student Closing:** Discuss the importance of a 3-d prototype. | | **Student Closing:** Which chair would you pick from your class and why? | | **Student Closing**: | | **Closing:** | | **Closing:** | |