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| Project Overview page 1 | | | | | | | | | | | | | | | | | | | |
| Name of Project: | | | Tinkertown | | | | | | | | | | | | Duration: | | Jan 12-March 27 | | |
| Subject/Course: | | | Project #2 | | | | | Teacher(s): Patrick Garland and Robin Brown | | | | | | | Grade Level: | | Core 2 (Grades 1&2) | | |
| Driving Question: | | | How can we design a model of a city that can be used to educate younger kids on how communities work and how people work together?  How can we build structures and vehicles that incorporate electricity and use basic principles of motion and force? | | | | | | | | | | | | | | | | |
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| Project Idea  Summary of the issue, challenge, investigation, scenario, or problem: | | | Students will build an understanding of how cities work and the different vital parts of a city. They will work together as a whole class to come up with a vision of a city that has all of the necessary components in order to meet the citizen’s needs (food, water, structures, transportation and energy) and draw a map of that city together. They will go through an authentic design process while planning and building models of their city. Students will build models of structures and vehicles that incorporate electricity and use basic principles of motion and force which we will be learning along the way. Students will also explore how people hold different roles within a city and work together to make their community serve their citizen’s needs. | | | | | | | | | | | | | | | | |
| Learning Goals: | | | Building structures to scale  Basic principles of physics  Mapping  How people work together in a community and how the different roles function together  Collaboration and the Design Process  Standards:  Science  1. The motion of objects can be observed and measured. As a basis for understanding this concept:  a. Students know the position of an object can be described by locating it in relation to another object or to the background.  b. Students know an object’s motion can be described by recording the change in position of the object over time.  c. Students know the way to change how something is moving is by giving it a push or a pull. The size of the change is related to the strength, or the amount of force, of the push or pull.  d. Students know tools and machines are used to apply pushes and pulls (forces) to make things move.  e. Students know objects fall to the ground unless something holds them up.  f. Students know magnets can be used to make some objects move without being touched.  Social Studies:  Students describe the rights and individual responsibilities of citizenship.  1. Understand the rule-making process in a direct democracy (everyone votes on  the rules) and in a representative democracy (an elected group of people make  the rules), giving examples of both systems in their classroom, school, and community.  Students explain governmental institutions and practices in the United States and other countries.  1. Explain how the United States and other countries make laws, carry out laws, determine whether laws have been violated, and punish wrongdoers.  2. Describe the ways in which groups and nations interact with one another to try to  resolve problems in such areas as trade, cultural contacts, treaties, diplomacy, and military force.  Students compare and contrast the absolute and relative locations of places  and people and describe the physical and/or human characteristics of places.  1. Locate on maps and globes their local community, California, the United States,  the seven continents, and the four oceans.  2. Compare the information that can be derived from a three-dimensional model  to the information that can be derived from a picture of the same location.  3. Construct a simple map, using cardinal directions and map symbols.  4. Describe how location, weather, and physical environment affect the way  people live, including the effects on their food, clothing, shelter, transportation,  and recreation.  4. Compare and contrast basic land use in urban, suburban, and rural environments in  California. | | | | | | | | | | | | | | | | |
| 21st Century Competencies to be taught and assessed: | | | Use of Academic Language Problem Solving X Creativity X  Technology Leadership Initiative  Critical Thinking X Accountability X | | | | | | | | | | | | | | | | |
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| Habits of Heart and Mind: | | | Collaboration | | | | | | X | | | Perseverance | | | | | |  | |
| Empathy | | | | | |  | | | Reflection | | | | | | X | |
| Flexibility | | | | | | X | | | Exploration | | | | | | X | |
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| Major Products & Performances  Deliverables | Group: | | | Map and model of the city  Presentation to Core 1 | | | | | | | | | | | | Presentation Audience  Presentation Audience:    Class  School | | | |
| Possibly Core 1 | | | |
| Individual: | | | Structure that uses electricity  Vehicle that moves  Log of their progress through the design process | | | | | | | | | | | | | | | |
| Project Overview page 2 | | | | | | | | | | | | | | | | | | | |
| Entry Event to  launch inquiry  and engage students: | | Student creates individual map of a city that they feel would meet all of their citizen’s needs. Students share out, create universal list of things that a city needs. | | | | | | | | | | | | | | | | | |
| Assessments | | Formative Assessments  (During Project) | | | | Quizzes/Tests | | | | |  | | | Practice Presentations | | | | | X |
| Journal/Learning Log (tinkering log) | | | | | X | | | Notes | | | | |  |
| Preliminary Plans/Outlines/Prototypes | | | | | X | | | Checklists | | | | |  |
| Rough Drafts | | | | |  | | | Concept Maps | | | | | X |
| Online Tests/Exams | | | | |  | | | Other: | | | | |  |
| Summative Assessments  (End of Project) | | | | Written Product(s), with rubric:  A | | | | | X | | | Other Product(s) or Performance(s), with  rubric:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |  |
| Oral Presentation, with rubric | | | | |  | | | Peer Evaluation | | | | | X |
| Multiple Choice/Short Answer Test | | | | |  | | | Self-Evaluation | | | | | X |
| Essay Test | | | | |  | | | Other: | | | | |  |
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| Resources Needed | | On-site people, facilities: | | | | | Tyler, Jim, maker space, 9th grade team at DVS that did similar project | | | | | | | | | | | | |
| Equipment: | | | | | Maker space tools, 3D printer, | | | | | | | | | | | | |
| Materials: | | | | | Trash for teachers, recyclable materials, graph paper, maps | | | | | | | | | | | | |
| Community resources: | | | | | Gensler (architecture firm), Heidi at Gensler, hobby shops, parents that are mechanics/ contractors/ architects LACMA (metropolis), metro, city hall, city planners | | | | | | | | | | | | |
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| Reflection Methods | | (Individual, Group, and/or Whole Class) | | | Journal/Learning Log | | | | | X | | | Focus Group | | | | |  | |
| Whole-Class Discussion | | | | | X | | | Fishbowl Discussion | | | | |  | |
| Survey | | | | |  | | | Other: | | | | |  | |

Possible (Home extension projects:

-Study and build cities/ communities from the past, compare to current cities

-Travel LA using the metro, see where you can and can’t get to, map your route

-Build vehicles or contraptions that move/ float/ push

-Study a particular aspect of the city government, contact someone who holds this position and interview them

-Research the city you live in, find out about its origins and history, and create an informational pamphlet on your city

-Explore the role that agriculture, transportation, or industrialization plays on the original development of cities

- Explore archeology and its role in uncovering cities and the lives that the people in that city led