



Twinmotion

TWINMOTION COMMUNITY SKATE PARK

Design

Grades 9-11

Two 75-minute blocks or four 40-minute class periods

Lesson/Author/Class Information

Lesson Title: Twinmotion Community Skate Park

Content/Grade: Design Grades 9–11

Lesson Timeframe: Two 75-minute blocks or four 40-minute class periods

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Lesson Overview

When was the last time you went to a skate park? What did you notice about the surrounding space? If it were up to you, what would you like to see in the park? Well, here's your chance to create your own interactive experience to communicate your vision.

Students will have the opportunity to create an outdoor skate park, with connecting themed spaces, such as green spaces, a wading pool, an outdoor performance space, or a place for graffiti and art to exist—ultimately creating a park that brings the community closer together to experience and celebrate life in harmony.

Students will apply creativity and visualization techniques that will be transferable to their future learning, including new career pathways into such fields as, urban planning, landscape architecture, environmental design, architecture, installation art, and more.

Description of class / learning environment

A learning environment that is open and accessible to all students, where there are opportunities for sketching, generating ideas, collaboration, and online research, and the availability for working with Twinmotion.

The space can be adapted to form clusters so that students can brainstorm in small groups, ask questions, problem solve, collaborate, and generate solutions.

Classroom should have computers available for all students, with flexible seating.

DESIRED RESULTS

What are the learning outcomes for students?

Essential Questions/Big Ideas

Which of the principles of design will be incorporated in the planning process of this project?
How will students transform conceptual 2D sketches to represent 3D spaces?
How will objects and created structures be transformed to reflect human scale?
How will different age groups experience your proposed park design?
What impact will this park make to the community collective experience?
What future career pathways could this project lead to?

Learning Outcomes/Objectives

- Students will be able to describe the design process and identify ways in which technological design can address an environmental need or challenge.
- Students will identify and describe the steps in the design process.
- Students will be able to describe the relationship between various steps of the design process.
- Students will be able to describe and apply strategies, techniques, and tools for researching, planning, and organizing projects to meet a specific environmental or design need.
- Students will demonstrate an understanding of drafting standards, conventions, and guidelines for representing design ideas graphically.
- Students will demonstrate an understanding of three-dimensional spaces.
- Students will demonstrate an awareness toward environmental spaces with a positive footprint.
- Students will demonstrate an understanding of creating community spaces.
- Students will demonstrate the ability to create three-dimensional constructs.
- Students will recognize that the skills implemented within this project connect directly to post-secondary destination and also to certain career pathways within an industry.
- Students will demonstrate the tools within Twinmotion to produce three-dimensional spaces
- Edit the video with video-editing software, and publish the final video!

ISTE Standards

3 Knowledge Constructor

- 3a Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

4 Innovative Designer

- 4c Students develop, test, and refine prototypes as part of a cyclical design process.
- 4d Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.

6 Creative Communicator

- 6c Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.

SOURCE: The Ontario Curriculum, Grades 11 and 12: Technological Education, 2000.
Technological Design

A TECHNOLOGICAL DESIGN FUNDAMENTALS

- A1 Describe the design process, and identify ways in which technological design can address an environmental need or challenge
 - A1.3 Identify and describe the steps in the design process
 - A1.4 Describe the relationship between various steps of the design process
- A2 Describe and apply strategies, techniques, and tools for researching, planning, and organizing projects to meet a specific environmental or other need
- A3 Demonstrate an understanding of drafting standards, conventions, and guidelines for representing design ideas graphically
 - A3.1 Compare different methods for representing design ideas graphically (e.g., mind maps, sketches, computer-aided drawings)
 - A3.2 Identify and describe various types of technical drawings (e.g. 2D and 3D drawings, floor plans, elevations, sections, detail and rendered drawings) and the drafting standards and conventions used in them (e.g., symbols, abbreviations, line types).
- A4 Making and Testing Models and Prototypes
 - A4.2 Identify criteria for assessing designs
- A5 Reporting and Presenting
 - A5.1 Demonstrate an understanding of technical and environmental terminology used in the design process
 - A5.3 Choose the most effective method to communicate progress and results for a given project from a variety of presentation tools and strategies

B TECHNOLOGICAL DESIGN SKILLS

- B1 Use appropriate tools and strategies to research, plan, and organize design projects that have environmentally sound designs and production processes
- B2 Apply appropriate methods for generating and graphically representing design ideas and solutions
- B3 Construct models and prototypes using a variety of techniques, tools, and materials, and assess these models and prototypes in terms of the design criteria

SOURCE: The Ontario Curriculum, Grades 11 and 12: The Arts, 2010.

ISTE Standards Continued

The Arts

A CREATING AND PRESENTING

- A1 The Creative Process: Apply the creative process to create media art works, individually and/or collaboratively
- A1.2 Develop plans, individually and/or collaboratively, that address a variety of creative challenges, and revise their plans on the basis of peer- and self-assessment
- A2 The Principles of Media Arts: Design and produce media art works, applying principles of media arts and using various elements from contributing arts (dance, drama, music, visual arts);
- A3 Using Technologies, Tools, and Techniques: Apply traditional and emerging technologies, tools, and techniques to produce and present media art works for a variety of audiences and purposes.
- A3.1 Explore a variety of traditional and emerging technologies, tools, and techniques, and use them to produce effective media art works

B REFLECTING, RESPONDING, AND ANALYSING

- B1 The Critical Analysis Process: demonstrate an understanding of the critical analysis process by examining, interpreting, assessing, and reflecting on media art works
- B1.2 Identify and describe, on the basis of exploration, the aesthetic and technical features of a contemporary media artwork, and describe how the artist has combined these features to create a unified work

B3 CONNECTIONS BEYOND THE CLASSROOM

- B3.1 Identify and describe, on the basis of research, areas for continued study in media arts and related fields, and describe their requirements
- B3.2 Identify skills associated with media arts, and explain how these skills can be applied in a range of careers related to media arts

[Common Core Standards](#)
[ISTE Standards for Students](#)
[NCSS Standards](#)
[NGSS Standards](#)

LESSON PLAN

Learning Activities

Project Brief/Guideline

Students will have the opportunity to create an outdoor skate park, with connecting themed spaces, such as green spaces, a wading pool, an outdoor performance space, and or a place for graffiti and art to exist—ultimately creating a park that brings the community closer together to experience life in harmony.

By implementing the tools found within Twinmotion, students will gain the creative and technical skills necessary to fully realize their ideas onto a three-dimensional space for further learning and exploration.

Task/Programmatic Requirements:

You are asked to create an outdoor skate park with connecting supporting spaces that the community can also interact with. You will choose either a hypothetical or real plot of land within your own community, large enough to house several suggested experiential spaces from the list below.

- 1.0 A skate park
- 2.0 A green space for people to throw Frisbees, run around with their pets, or simply sit on benches and enjoy life passing by.
- 3.0 A place for artists to have walls to create graffiti.
- 4.0 An outdoor amphitheater for performing music.
- 5.0 A wading pool for children to run in on a warm day, or simply have your remote-controlled boats cruising on the water.
- 6.0 Passageways/walkways connecting your spaces, just like a city map.

Review the three research links provided for you below under Research & Analysis, which showcase how certain cities have interpreted such outdoor spaces. Clearly, we are not designing to that level of sophistication; however, a number of the ideas from each outdoor space can certainly be adapted to our project, under the supervision and guidance of your teacher.

Stages of the Project

RESEARCH & ANALYSIS

Students will start this project by researching skate parks online, downloading images, and observing and noting what physical components make up such spaces. We will explore three outdoor places within North America that will further unpack the importance of creating such outdoor spaces within our cities. We will investigate:

NYC High Line

Toronto Yorkville Urban Park
Seattle Olympic Sculpture Park

These spaces have made a tremendous impact on the history and fabric of their respective communities.

NYC High Line

The High Line is a public park built on a historic freight rail line elevated above the streets on Manhattan's West Side. Saved from demolition by neighborhood residents and the City of New York, the High Line opened in 2009 as a hybrid public space where visitors experience nature, art, and design.

Source: <https://www.thehighline.org/visit/>

LESSON PLAN CONTINUED

Toronto-Yorkville Urban Park

Background Story of the Park

https://www.blogto.com/sports_play/2012/08/toronto_parks_village_of_yorkville_park/

“It has been demonstrated in cities around the world that successful parks and open spaces can play a vital role in enhancing the lives of citizens, providing a focal point for neighborhoods, and revitalizing the economy of the areas in which they are located... The park now serves as a popular meeting place for residents, business owners, and tourists. The thriving retail environment around the park is a testament to the ongoing rejuvenation of Cumberland Street and a sign of a successful park design.”

— Brenda Patterson, General Manager, City of Toronto Parks, Forestry and Recreation

<https://www.asla.org/2012awards/034.html>

Seattle Art Museum: Olympic Sculpture Park

Envisioned as a new model for an urban sculpture park, the project is located on an industrial site at the water’s edge. The design creates a continuous constructed landscape for art, forms an uninterrupted Z-shaped “green” platform, and descends 40 feet from the city to the water, capitalizing on views of the skyline and Elliot Bay and rising over the existing infrastructure to reconnect the urban core to the revitalized waterfront.

<http://www.weissmanfredi.com/project/seattle-art-museum-olympic-sculpture-park>

Presentation boards and/or digital panels can be made with notes of student findings, which can then be presented to the class (depending on the teacher’s directions). Their findings will be the foundation for developing their own concepts of the skate park in the next stage of the project.

CONCEPT DEVELOPMENT

The following themes will help broaden the opportunity to customize the space further by making the skate park an integral part of the community experience. Students can choose to implement a number of the themes below. The more themes selected, the more the complexity of the project will give rise to the opportunity for teachers to run this project in pairs or groups.

- Green Space
- A Wading Pool
- Outdoor Music/Performance Space
- Public Art Space
- A Sculpture Garden
- Graffiti Wall

In this stage, students will make simple schematic sketches with a view from above—a master plan for the park that showcases the different areas that make up their proposed skate park. This may involve showcasing green spaces, a wading pool, a sculpture garden, a performance space, and pathways connecting all their spaces together—similar to their findings from the earlier three cities research step.

Presentation boards and or digital panels can be made for their proposals that can then be presented to the class (depending on the teacher’s directions).

LESSON PLAN CONTINUED

BUILDING THE PROPOSED DESIGN IN TWINMOTION

The creative process is an ongoing iteration of idea development leading to solutions; the building stage, peer feedback and iteration phase, and presentation of the completed work.

During this stage, students will design a sketch and explanation of their proposed park. This can be completed as a paper and pencil drawing, or using any available graphics software.

Teachers can devise their own expectations depending on grade, creative and technical knowledge of their students. Additionally, teachers and students are advised to watch the Twinmotion Learning Tutorials found on Epic's Learning Portal prior to implementing the creation of their own skate park with supporting spaces for community interaction.

Exploring Twinmotion software: 2–3 hours to learn and explore the software

Note: Teachers and students are advised to watch the Twinmotion - Getting started video and check out the Twinmotion support site.

Key technical skills necessary to complete the assignment:

- Navigating the Twinmotion User Interface
- How to pan and rotate in 3D Space
- How to move, rotate, scale and duplicate Objects
- How to select Objects and apply Materials
- How to manipulate Primitive Objects
- How to change the color of a Material
- How to apply textures to Objects
- How to import Objects from SketchUp Warehouse
- How to name and hide Objects within a scene
- How to create images from your scene
- How to render and export an animation

Develop Park: 2–4 hours of student work in Twinmotion to complete their parks.

Project Deliverables

Deliverables

- Completed Sustainable Neighborhood Park Twinmotion file
- A short, animated walkthrough showing the key features of the park
- Three images rendered to show the key features of the park
- An original 2D sketch showing the original layout
- A one-page document listing the sustainable features, with explanations for each

Note: Students can combine these items in a slide presentation.

Interdisciplinary and 21st-Century Connections

Art, technological education, geography, math departments, and any course that addresses the impact of having a positive green footprint—such as creating green spaces to further enhance the human condition — will also be to participate with and contribute to this project.

The following 21st-century skills can be incorporated for this lesson.

- Critical thinking
- Creativity
- Collaboration
- Communication
- Information literacy
- Media literacy
- Technology literacy
- Flexibility
- Leadership
- Initiative
- Productivity
- Social skills

Modifications and Accommodations

Pre-recorded lessons can be given out to be viewed numerous times prior to commencing the activity.

Additional time can be given to complete the assignment.

Pairing and/or grouping of students may be suggested in order to complete the activity.

Creating or providing a quiet space without many distractions, as needed.

Providing headphones for listening to pre-recorded lessons, as needed.

Extra support for students as required by IEP.

RUBRIC / ASSESSMENT

Rubric for the Skate Park

Teachers may add or delete programmatic requirements according to the grade level, time allocated, and the possibility of running this project with one student, in pairs, or in groups to support the complexity of the project. Additionally, based on the proposed task requirements in the lesson plan, teachers can modify the scope based on differentiated student interests, and a number of different combinations of the program can be created accordingly.

	Approaching	Meets	Exceeds
<p>Proposed plan showcases programmatic elements of a skate park with supporting spaces for the community to interact in.</p>	<p>Minimal programmatic planning is evident in the submitted plan; additional supporting elements are required to showcase the full scope of the project.</p>	<p>Programmatic planning is evident in the submitted plan; supporting spaces are designed to showcase the scope of the project.</p>	<p>Programmatic planning is evident in the submitted plan, with great level of detail; supporting spaces are designed to showcase the scope of project. Pathways are created from one space to another, providing opportunities for people to interact.</p>
<p>Green spaces are created within the park to convey a positive green footprint. Students created the space to include trees, plants, grass, light fixtures, and seating benches.</p>	<p>Green space requires further green components to support the space.</p>	<p>The designed green space has the following elements implemented: trees, grass, plants, benches, and streetlights. Further attention to layout is needed; students could have incorporated more principles of design.</p>	<p>Green spaces are created within the park to convey a positive green footprint. Students created the space to include trees, plants, grass, light fixtures, and seating benches. The green space is designed with great attention to detail. Principles of design, such repetition, alignment, and balance, have been incorporated within the layout of the space.</p>
<p>An outdoor performance space is created for students and adults to perform in. A roof structure is created to keep the elements away during performances, and to create shade when necessary. The space is created in an open concept design, a raised area representing a stage, with seating, and with supporting pillars to hold the roof structure.</p>	<p>The design of the outdoor performance space requires additional elements, such as pillars and roof structure to support the design.</p>	<p>The design of the outdoor performance space has architectural elements such as a raised level to represent a stage, seating, columns, and a roof structure.</p>	<p>A roof structure is created to keep the elements away during performances, and to create shade when necessary. The space is created in an open concept design: raised area representing a stage, seating, and supporting pillars to hold the roof structure. 3D element placement comes together in a harmonious manner, in terms of proportion, size, and scale.</p>

RUBRIC / ASSESSMENT CONTINUED

	Approaching	Meets	Exceeds
Optional assessment whereby students attempt to apply a number of the principles of design in their implementation of 3D constructs within the thematic spaces.			
Themed spaces have the principles of design incorporated in some capacity, incorporating such principles as pattern and rhythm, balance of symmetry and asymmetry, contrast, theme and variation, proportion and scale, unity and variety, and emphasis and dominance.	Principles of design within the thematic spaces are realized in a limited capacity; spaces require further attention as relates to creating pattern, balance, variety, and emphasis.	Principles of design within the thematic spaces are realized in a moderate capacity; spaces have constructs that utilize pattern, balance, variety, proportion, and emphasis.	Principles of design within the thematic spaces are realized with great attention to detail as it relates to creating spaces that demonstrate the implementation of pattern, balance, variety, proportion, and emphasis in creating thematic spaces throughout the project.
Rendered images showcase rules of composition by the application of foreground, middle ground, and background elements. Rule of thirds is applied in the composition and framing of shots.	Rendered images showcase limited understanding of art direction (staging). Framing and composition need to be considered further to improve the shot.	Rendered images showcase rules of composition by the application of foreground, middle ground, and background.	Rendered images showcase rules of composition. The application of foreground, middle ground, and background are demonstrated. Rule of thirds is applied in the composition and framing of shots.
Teacher Feedback:			