

Tactical Urbanism: Mock-Up Pop-Up

Subject Areas: Science & Technology, Problem Solving

Associated Unit: Tactical Urbanism – Pop-Up Street Projects

Lesson Title: Mock-Up Pop-Up

Header



Image 2-A

Image file:

http://wrtwc.org/wp-content/uploads/2020/02/Complete_Street_Mock_Up-1.png

ADA Description: A complete street mock up consisting of a 4-lane road (2 lanes in each direction), two dedicated bike lanes (1 in each direction) and a separated pedestrian sidewalk on one side.

Source/Rights: bill.becker@ronank12.edu

Caption: Student-Designed Mock Up of a Complete Street

Grade Level: Middle School (6th – 8th)

Lesson # 2 of 3

Lesson Dependency : The following interconnected lessons can be used independently or as a series:

- (1 of 3) Tactical Urbanism: Pop-Up Projects
- (2 of 3) Tactical Urbanism: Mock-Up Pop-Up (This Lesson)
- (3 of 3) Tactical Urbanism: Pop-Up Data Crunch

Time Required: 45-60 minutes

Summary: Students will be given a scenario which they will have to use their understanding of tactical urbanism to address the neighborhood issue. Students will use their drawn out plans from previous lesson, (1 of 3) Tactical Urbanism: Pop-Up Projects, or develop a plan from scratch on a model-sized traffic area using an assortment of materials provided to them.

Engineering Connection: Tactical urbanism is a city and/or citizen-led approach to neighborhood using short-term, low-cost and scalable interventions to catalyze long term change. City engineers may use these temporary approaches to traffic calming before committing to more costly, permanent approaches. Like city engineers, students will be expected to *model* temporary solutions to be scaled to a specific scenario

Engineering Category: Engineering design process

Keywords: Tactical Urbanism, Pop Up Street Projects, Mock Up, Street Design, Traffic Calming

Educational Standards

[State STEM Standards](#)

Montana K-12 Science Standards – Standard 5

Description: Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.

Education Level: Grades K – 12

Subject: Science

[International Technology and Engineering Educator Association \(ITEEA\) Standards](#)

Standards for Technological Literacy: Content for the Study of Technology – The Designed World 18

Description: Students will develop an understanding of and be able to select and use transportation technologies.

Education Level: Grades K – 12

Subject: Technology

[Next Generation Science Standards \(NGSS\)](#)

Engineering Design: MS-ETS1-1

Description: Students who demonstrate understanding can: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Education Level: Grades 6 – 8

Subject: Science

Engineering Design: MS-ETS1-2

Description: Students who demonstrate understanding can: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Education Level: Grades 6 - 8

Subject: Science

[Common Core State Standards \(CCSS\)](#)

Statement Notation: CCSS.Math.Practice.MP1

Alt. Statement Notation: MP.1

Description: Standards for Mathematical Practice – Standard 1
Make sense of problems and persevere in solving them.

Level: Grades K – 12

Subject: Math

Pre-Requisite Knowledge

Basic understanding of what tactical urbanism is and how it is used within communities. This information is available in lesson 1 of this series.

Learning Objectives

After this lesson, students should be able to:

- Identify specific problems for given traffic-related scenarios and make suggestions on how to address those needs.

- Create a traffic calming strategy to address the needs of a specific given traffic-related scenario.

Introduction / Motivation

Part A (If you used lesson 1, POP-UP PROJECTS, skip to Part B)

Traffic calming uses physical design and other measures to improve safety for motorists, pedestrians and cyclists. It aims to encourage safer, more responsible driving and potentially reduce traffic flow. Urban planners and traffic engineers have many strategies for traffic calming, including *traffic circles*, *curb extensions*, *pedestrian crossings*, *creative use of space*, *dedicated bike paths* and *bulb outs*.

[Video Introduction for Traffic Calming – News station report on Bozeman Art Installations](#)

Part B

Another possible alternative to drawing out plans is to create a scale version of the pop-up intervention that will be used. This activity focuses on having students use resources made available to them to create a scaled version of their pop-up intervention.

Lesson Background & Concepts for Teachers

Part A (If you used lesson 1, POP-UP PROJECTS, skip to Part B)

This lesson has been designed as an introduction to traffic calming as well as some of the strategies used in traffic calming. The hope is for students to become familiar with many of the tactics used in tactical urbanism; specifically related to traffic calming.

The reason these low-cost, temporary interventions are used is to test the efficiency of designs and use summary statistics to determine if more permanent measures are worth the investment.

Part B

The idea here is for students to use a limited amount of supplies to put their plans into place. You, the teacher will determine what those resources are and how you want to have them implemented (Perhaps assign a monetary value for each supply and give the groups a budget).

Image



Figure 2-B

Image file:

http://wrtwc.org/wp-content/uploads/2020/02/Uncontrolled_Intersection_Mock_Up-1.png

ADA Description: A 4-way intersection mock up which has added 4 pedestrian crossings and a traffic circle to the previously uncontrolled intersection.

Source/Rights: bill.becker@ronank12.edu

Caption: Student-Designed Mock Up of a previously uncontrolled intersection

Vocabulary / Definitions

Word	Definition
Tactical Urbanism	A city and/or citizen-led approach to neighborhood using short-term, low-cost and scalable interventions to catalyze long term change.
Traffic Calming	A full range of methods to slow cars, but not necessarily ban them, as they move through commercial and residential neighborhoods.
Traffic Circle	A road junction at which traffic moves in one direction round a central island to reach one of the roads converging on it.
Curb Extension	Used to extend the sidewalk, reducing the crossing distance and allowing pedestrians about to cross and approaching vehicle drivers to see each other when vehicles parked in a parking lane would otherwise block visibility.
Pedestrian Crossing	(aka: crosswalk) A marked part of a road where pedestrians have right of way to cross.
Creative Use of Space	Reimagining of excess roadway space or space next to roadways in an effort to increase functionality of that space, increase the visibility of pedestrians and reduce the speed of vehicle travel.
Dedicated Bike Path	A pathway separated from motorized traffic and dedicated to cycling or shared with pedestrians or other non-motorized users.

Associated Activities

(If you used lesson 1, POP-UP PROJECTS, skip to step 6)

- 1) Split into groups of 3-4.
- 2) Start [TACTICAL URBANISM POWERPOINT](#) (link will download PPT)¹ having groups come up with own definition of “*Tactical Urbanism.*” (Slide 1 Only)
- 3) Class discussion of “*Tactical Urbanism.*” (Slides 2-3)
- 4) Pre-Lesson Assessment: Use [TACTICAL URBANISM POWERPOINT](#) to gauge student knowledge of vocabulary associated with traffic calming. (Slides 4-9)
- 5) Post-Introduction Assessment: Use [TACTICAL URBANISM POWERPOINT](#) to have groups decide which strategy is being shown. Slides (10-37)
- 6) Using [ROADWAY PROBLEM SCENARIOS](#) (link will download document)², have students discuss which strategy/strategies they think are appropriate to address the issues posed in their scenarios.

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I would recommend having the scenarios already drawn out on pavement for accuracy sake (as well as time). You can use sidewalk chalk or painters tape. Yellow painters tape worked really well with our test group).
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- 7) Lesson Summary Assessment: Students will use the supplies provided by the teacher to implement strategies addressing the issues posed in their [ROADWAY PROBLEM SCENARIOS](#). Teacher can provide as many or few supplies as needed. Have fun with this. We filled boxes with random supplies from around the classroom and had

¹ The “Tactical Urbanism Powerpoint” cited throughout this lesson plan is the same document. While the link is provided whenever it is mentioned, it is only necessary to download it once.

² The “Roadway Problem Scenarios” cited throughout this lesson plan is the same document. While the link is provided whenever it is mentioned, it is only necessary to download it once.

them at each “project site” when the students arrived but there are many ways to do this.

Lesson Closure

- 1) Share Out: Groups will share their [ROADWAY PROBLEM SCENARIOS](#) as well as what they designed to address the issues posed in their [ROADWAY PROBLEM SCENARIOS](#).
- 2) Homework (Optional): Students will research examples of tactical urbanism or traffic calming efforts in their local area.

Assessment

Pre-Lesson Assessment: *Descriptive Title:* What is *Traffic Calming* and How Do You Do It? Use [TACTICAL URBANISM POWERPOINT](#) to gauge student knowledge of vocabulary associated with traffic calming. (Slides 1-9)

Post-Introduction Assessment: *Descriptive Title:* Which One Is It? Use [TACTICAL URBANISM POWERPOINT](#) to have groups decide which strategy is being shown. (Slides 10-37)

Lesson Summary Assessment

Descriptive Title: Mock It Up!

Students will draw a design showing where and how they will implement strategies to address the issues posed in their [ROADWAY PROBLEM SCENARIOS](#).

Homework

Descriptive Title: Tactical Urbanism in My Town

Students will research examples of tactical urbanism or traffic calming efforts in their local area.

Lesson Extension Activities:

- Students could be “city inspectors” and write an analysis of how the measures taken addressed the problems posed.
- Students could think of an area in their own neighborhood or around school campus, map it out and implement an appropriate strategy to calm traffic.

Additional Multimedia Support

[NEWSPAPER ARTICLE ON TRAFFIC CALMING ART IN BOZEMAN](#)

[NEWS STATION SEGMENT ON BOZEMAN ART INSTALLATIONS](#)

References

N/A

Attachments

[TACTICAL URBANISM POWERPOINT](#) for lesson.

[ROADWAY PROBLEM SCENARIOS](#) page for lesson.

Other

N/A

Redirect URL

N/A

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Classroom Testing Information

This curriculum was tested with a summer camp consisting of 20 students (grades 6, 7 & 8) on July 25, 2019 at Montana State University in Bozeman, Montana.