

How to Map Buildings OpenStreetMap Core Skill

Learning Level
Beginner

Time
Approximately 60 minutes



Image Credit: Creative Commons BY-SA 2.0 | OpenStreetMap Foundation

Materials Needed

For the educator:
Computer with Internet
Printer and paper

For the student(s):
Blank Pieces of Paper
Printed Maps
Colored Pencils

Questions? Comments?

Reach out to us through
email info@teachosm.org
or tweet [@TeachOSM](https://twitter.com/TeachOSM)

Background

For those new to open mapping, buildings are a good feature to start with. They're relatively simple to draw and tag, and they're very useful to OpenStreetMap users, such as public health officials, aid organizations, and environmental stewards. Adding buildings to the map is a simple way to demonstrate the utility of maps and show to learners the value of geographic information.

Activity

Instructors will facilitate learners in following step-by-step instructions on the following pages to map buildings on OpenStreetMap:

- Select an area to map.
- Using the satellite imagery as a backdrop, trace and tag buildings.
- Lastly, save them to OpenStreetMap.

Recommended For
High School Students
College Freshmen

Course Time Needed
Preparation: 30-60 min
Execution: 1 hour

Learning Objectives
After completing this lesson, students will be able to:

- 1) Identify building outlines on aerial imagery
- 2) Trace a building footprint
- 3) Tag buildings appropriately

Standards
National Geography Standards

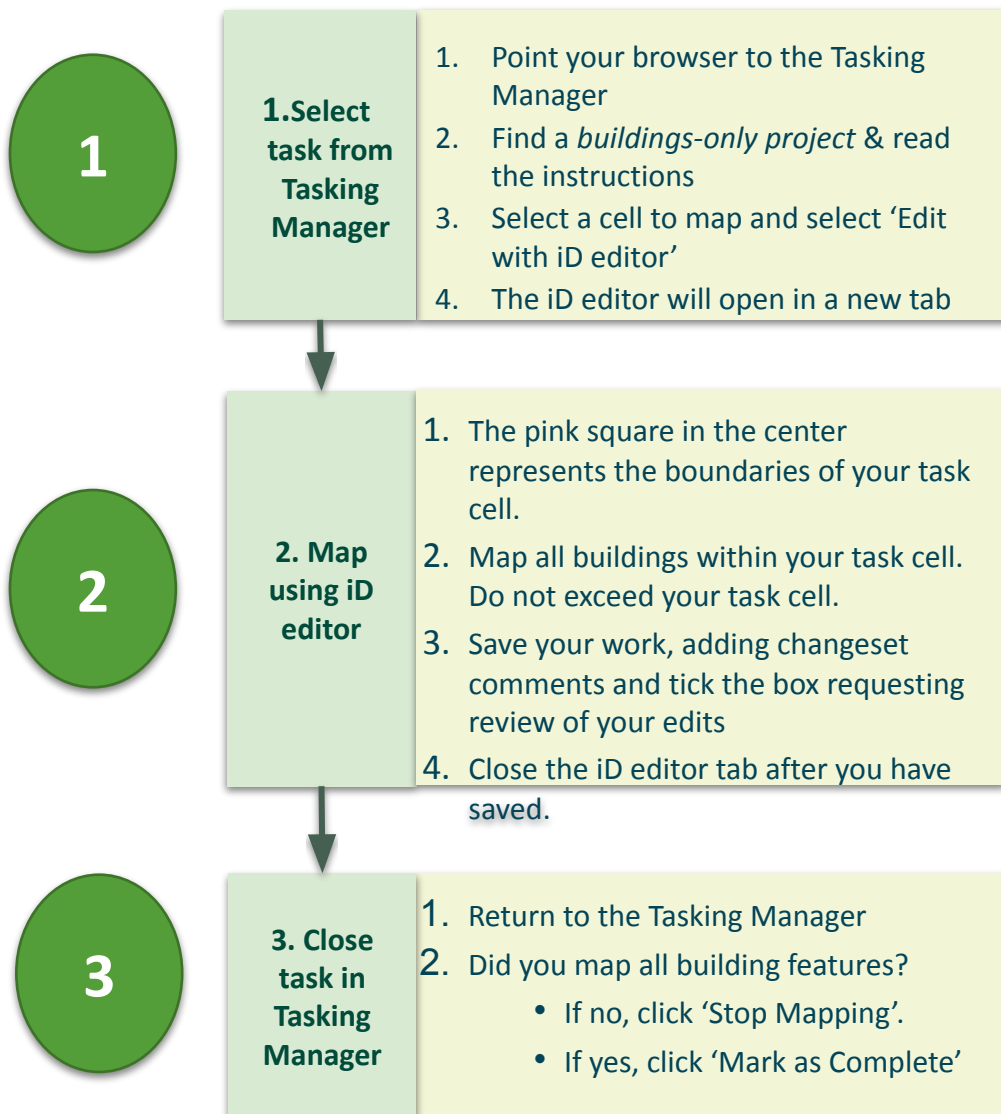
Standard 1: How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

Standard 2: How to use mental maps to organize information about people, places and environments in a spatial context.

Educator Materials
Computer with Internet

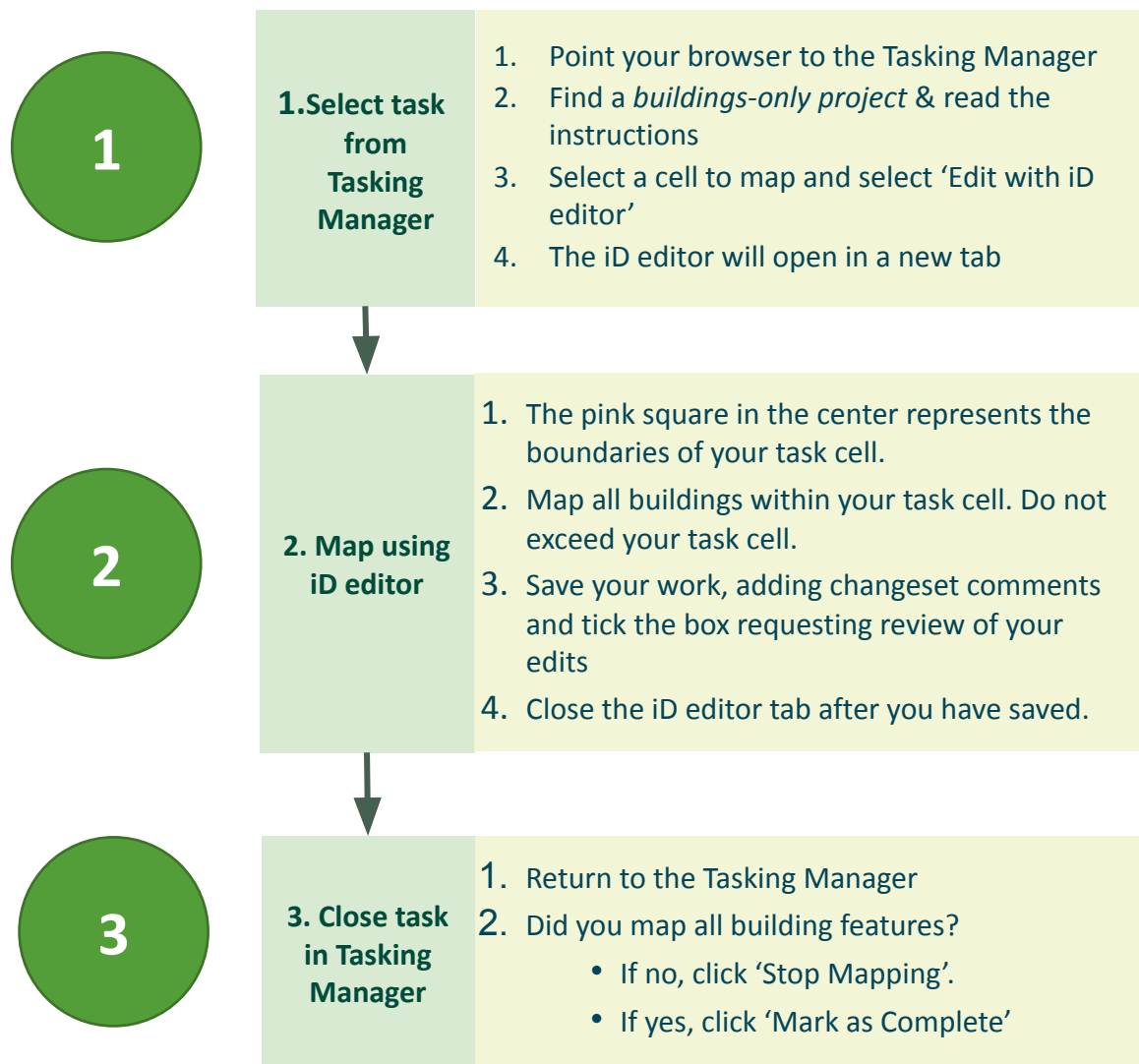
Student Materials
Computer with Internet

How to Map Buildings: Overview



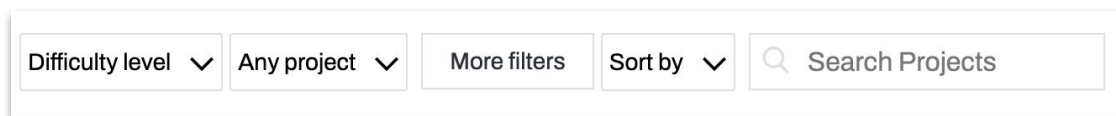
Activity Overview:

As shown below, the activity can be broken down into 3 steps, which helps simplify the workflow. We'll refer back to this workflow in the pages that follow.

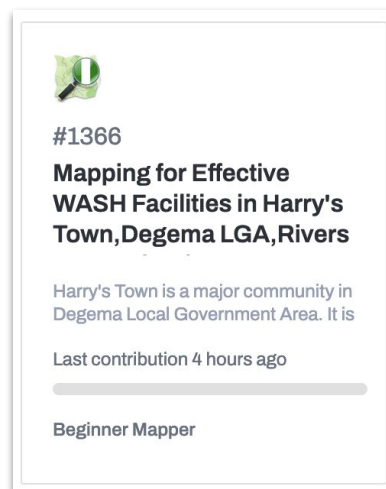


Step 1: Select a Task from the Tasking Manager

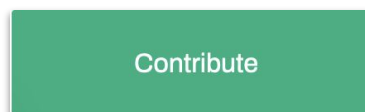
1. In this activity, teachers will guide students in the use of the TeachOSM Tasking Manager (<https://tasks.teachosm.org>) to map buildings.
2. Instruct students to point their browsers to the TeachOSM Tasking Manager (<https://tasks.teachosm.org>) and **sign In** using their OpenStreetMap credentials.
3. Click 'Explore Projects' to bring up a list of all projects. Use a combination of filters, shown in the image below, to refine your search for an appropriate project.

A horizontal filter bar with five elements: a dropdown menu labeled 'Difficulty level', a dropdown menu labeled 'Any project', a button labeled 'More filters', a dropdown menu labeled 'Sort by', and a search input field with a magnifying glass icon and the text 'Search Projects'.

4. Once the student has located a suitable project, click on the project 'card' to be taken to the project page. The image below is an example project card:



5. On the project page, instruct students to read the **Description**, which tells you *what* you will be mapping and *why* they are mapping. Then instruct students to click the '**Contribute**' button in the lower right corner to take them to the task page:



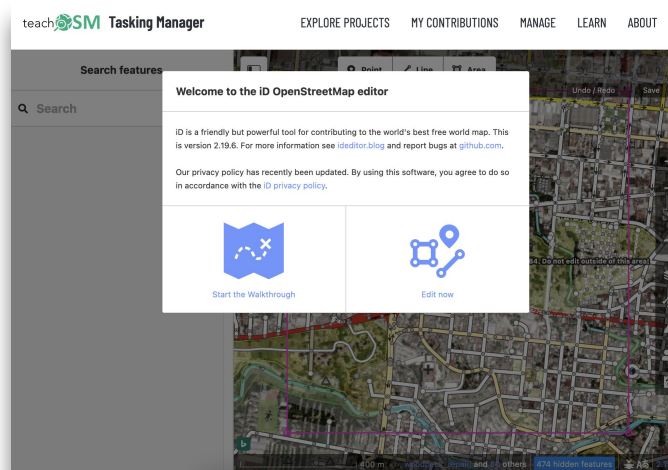
Step 2: Map the buildings in your task square

This opens the iD editor.

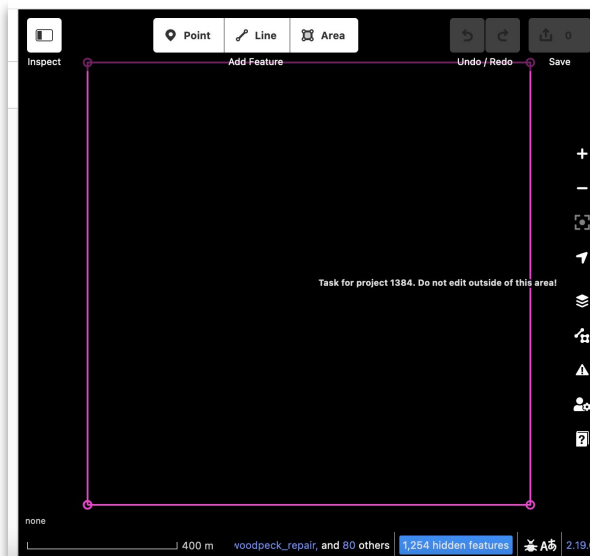
1. From the task page, Instruct students to scroll down and read the **Instructions**, which tells **how** to map. The instructions outline the *process* for mapping. That is, what features should be mapped (e.g. buildings, roads, rails, etc.) and how it should be mapped.
2. Once students have read the instructions, have them click on the map to select a task square and then click, 'Map Selected Task' to start the **iD editor**.

Map selected task

3. When the iD editor first starts, mappers will be presented with a choice of starting the iD editor **Walkthrough** or **Edit Now**, as depicted in the image below. Click, 'Edit now'.



4. The bright pink, or magenta box in the center of the screen, shown below, corresponds to the selected task square. Map *only* within the boundaries of the task square.



Step 2: Map the Buildings in your task square (cont.)

Next steps are to zoom in and trace each building footprint.

1. Find a building, or group of buildings, and zoom in so you can clearly distinguish the building footprint. The zoom controls are the '+' and '-' on the right side of the screen as outlined at right:



2. Use the images below to determine how closely you should zoom in:

Too far out



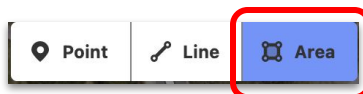
Still too far out



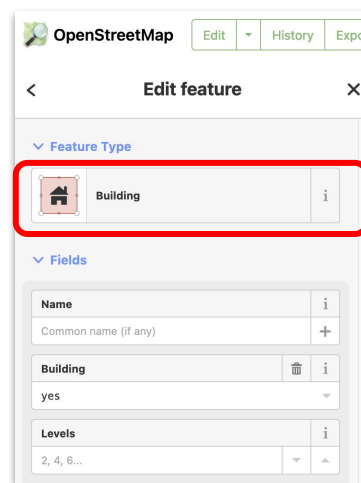
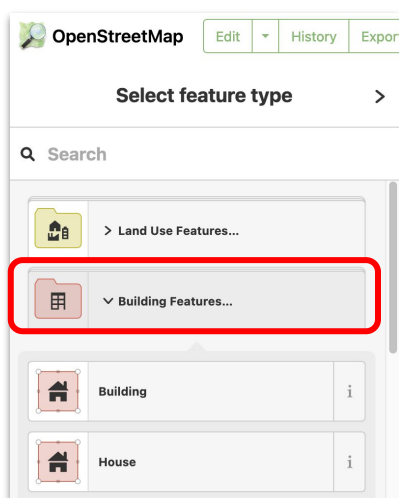
Just right



3. Click 'Area' as outlined at right:



4. Then trace by clicking the first corner of the building, then the second, clicking each corner until complete. Double-click on the last point to finish.
5. Next tag the area as a building. You're not likely to know what kind of building this is, so just label it as a building. Select 'Building Features', then 'Building'.



Step 2: Mapping the Buildings in your task square (cont.)

Now, to save your work.

Click 'Save' after every ~15 buildings so you don't risk losing your work. Click, 'Save' and follow these steps:

1. ADD CHANGESSET COMMENTS: You must add a changeset comment with:

1. A short description of what was mapped, e.g. "Added some buildings"
2. A #Team hashtag so you get credit!

2. ADD SOURCE: Where did you get your map information? Select from the drop down.

3. REQUEST REVIEW: Tick the box requesting a review of edits. OpenStreetMap validators will review your work & give feedback.

4. UPLOAD: Upload your edits

5. Exit the iD editor by clicking the 'OpenStreetMap' banner in the upper left.

What is a 'changeset comment'? A changeset is a group of edits. A changeset comment is a short, descriptive summary of what you mapped.

Why add a changeset comment? Comments not only describe what you did, but you can track what you did using the **changeset #hashtags**.

The screenshot shows the 'Upload to OpenStreetMap' dialog box. Red arrows point from the instructions to specific parts of the interface: one to the 'Changeset Comment' field, one to the 'Sources' dropdown, one to the 'I would like someone to review my edits.' checkbox, and one to the 'Upload' button. The 'Changeset Comment' field contains the text '#teachosm-task-7 #virginia #lovingston'. The 'Sources' dropdown shows 'aerial imagery'. The 'Suggested Hashtags' section shows the same three hashtags. The 'Upload' button is highlighted with a red box.

OpenStreetMap Edit History Export

Upload to OpenStreetMap

Changeset Comment

#teachosm-task-7 #virginia #lovingston

Sources

aerial imagery Add...

Suggested Hashtags

#teachosm-task-7 #virginia #lovingston

#example...

The changes you upload as sejohnson will be visible on all maps that use OpenStreetMap data.

☐ I would like someone to review my edits.

Cancel Upload

Step 2: Mapping the Buildings in your task square (cont.)

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Cancel Upload

Step 3: Close the Task (cont.)

After saving your edits, follow these steps to close the task square and finish mapping.

1. On the right-hand panel, you'll see a question: 'Is the task completely mapped?' as shown at right.
2. If you have mapped ALL the buildings in your task square, tick the button 'Yes'.
3. If you have NOT mapped all the building, tick the button 'No'
4. (You may optionally add a comment noting anything unusual in this task.)
5. Once you've ticked the button, click the 'Submit' button, shown at right.

#132 | Map4SaintLucia

#MAPSAINTLUCIA - ROSEAU/JACMEL AREA · #60

🕒 1 hour, 58 minutes left

COMPLETION INSTRUCTIONS HISTORY

TASK STATUS ?

Is this task completely mapped?

☐ Yes

☐ No

☐ The imagery is bad

COMMENT

Is this task completely mapped?

- ☐ Yes
- ☒ No
- ☐ The imagery is bad

Submit task

Activity 2: Mapping Review

Class Discussion Questions

- a. Ask students, why do they think mapping buildings is an important task? Why might a map of buildings be useful?
- b. Conveying the concept of **map accuracy** is fundamental to the practice of cartography & mapmaking. Good technique involves tracing the building footprint as faithfully as possible. Discuss the challenges of accuracy in tracing buildings from imagery. For example, roof ridgelines present a challenge to new mappers. The building footprint appears skewed if the satellite imagery is taken at a slightly oblique angle. The images below show an example and how to fix these mistakes:



As viewed



Wrong! Don't trace roof



Correct! Footprint

- c. What buildings are missing? What was students' reasoning for adding and not adding certain buildings? For example, were they oddly shaped? Or, was the imagery fuzzy? Were there trees & vegetation obscuring parts of the building?
- d. How familiar were the students with the area they were mapping? Can this aspect be used to teach the concepts of local, regional, and global geographic scope?
- e. Did students think certain buildings were more important to map than others?
- f. Were the students able to identify landmarks as they mapped?

Next steps:

1. Simple Roads, or
2. Field Mapping