



# POGIL Collaborative Worksheets

## Student guide

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Process-Oriented Guided Inquiry Learning (POGIL) worksheets are stand-alone, hands-on activities completed collaboratively with other students prior to lecturing, to support the discovery of new concepts. We encourage you to complete the activities with a partner.


## Why POGIL?

**Hands-on learning.** Hands-on, active learning where students self-explain (or explain to others), form hypotheses, and build connections collaboratively leads to deeper learning. These POGILs are also doable without a computer, which may help when access to video broadband or a python interpreter is difficult.

**Community.** Working with a partner provides a sense of belonging in the learning community which results in greater persistence in the face of obstacles.

## How to POGIL?

We'll introduce details about POGILing in this document, but the basic steps are below:

- w Find a study buddy
  - w Set-up a regular 30 minutes/POGIL to work together
  - w Watch the recorded lecture after you complete the POGIL
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**Find a study buddy.** When we have class, you will POGIL with peers seated near you. After class, you may want to set-up a separate meet-up to POGIL with others.

**Decide meeting logistics.** Choose meeting times to POGIL with peers outside of class. POGILs are distributed on MWF class days (and posted online shortly afterward).

**Talk through the POGIL with teammates.** POGIL activities are available on the course website. Once you've downloaded the POGIL worksheet, it steps you through the discovery of computer programming concepts supporting *thinking like a computer scientist*. Rather than telling you content, POGILs step you through a series of questions that help you discover the information on your own, which is a valuable life-long learning skill.

**Watch the pre-recorded lectures after POGILing.** Once you've completed the POGIL worksheets, you're ready to watch the lecture videos, links will be posted to the course website. Now that you've gained some familiarity with the new concepts through POGIL, the lectures provide top-down guidance into the nuances of those concepts.

CSCI 134				
Introduction to Computer Science				
Home   Lectures   Assignments   Resources   Williams CS				
Course Schedule				
The table below lists the topics we will discuss and any items associated with each class/date. Some of these resources will only be accessible from within the campus network. Information about the proxy server can be found <a href="#">here</a> .				
The schedule is subject to change: we may wish to explore new topics in response to current events or student interest. You're more than welcome to work ahead, but please check with us first!				
Mon	Tue	Wed	Thu	Fri
9/2	9/3	9/4	9/5	9/6
				Welcome & overview
				<a href="#">Course Syllabus</a>
				<a href="#">Slides</a>
				<a href="#">Activity</a>
				<a href="#">Homework 1</a>

**Ask questions in Student Help Hours.** As you're completing the POGILs and watching the lectures, keep track of any questions you may have. Ask your questions in class, or attend instructor Student Help Hours or TA hours (all posted to the course website) with these prepared questions and you will make the most out of your Student Help Hours time!

*POGILs are classroom activities to guide learning.  
If you encounter any issues/typos, please let Iris know so she can fix them!*

## References

Below is a sample of scientific evidence supporting the use of POGIL and active learning methods for deeper student learning:

- W** Vanags et al (2013). "Process-oriented guided-inquiry learning improves long-term retention of information"
- W** Hu et al (2014). "Teaching CS 1 with POGIL activities and roles."
- W** Freeman et al (2014). "Active learning increases student performance in STEM."
- W** Deslauriers et al (2019). "Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom"