



# Pig, a game of decisions

## Activity outline

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### Warmup

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- Make sure that you understand the rules of *Pig*.
- Play a few games of *Pig* with your partner.
- Discuss with your partner *how* you each decided whether to continue throwing the die. **What information was important at each decision point?**

### Algorithm

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- Come up with a set of rules that you feel could be used to play a good game of *Pig*. If you can do this precisely enough you should be able to **express your rules** in the form of a Python function of the form:

```
1  def <function-name>(my_score, loot, your_score):  
2      # Your code goes here.  
3      # Return True to continue throwing the die,  
4      # or False to end your turn and take the loot.  
5      return False
```

- Discuss why the result of a single game is not very useful to determine whether a set of rules plays a good game of *Pig*.
- Discuss how we might test *how good* a set of rules is? What would it **mean to say that a set of rules is the *best* set of rules?**

### Pig Arena

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- Send your code to Mr Ambler so that he can pit it against the code of the other groups to see which group produced the "best" rules.

## Results

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- Take a look at the arena performance reports generated by Mr Ambler. How well did your code perform against that of the other groups?
- How did the *arena* decide which group produced the best code?

## Issues Encountered

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It was difficult to:

- Precisely state the rules we came up with in terms of the information that was available.
- Define what we mean by "good" or "best" when evaluating a set of rules.
- Determine which sets of rules are "good" or "best" using our definitions.

## Pig and Ethics

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In *ethics* we are very often interested in potential *codes of conduct* or sets of rules that might be used to decide how members of societies *should* respond to *situations*. (In a sense, a *situation* is simply a *set of information that an individual has access to at a point in time*.)

Let us consider a question that often comes up in considerations of codes of conduct: *When is it right or acceptable for a person to appropriate something from someone else?*

Specifically, let's ask:

1. What **information** would be important to take into account?
2. What **rules** do you feel we ought to follow in making a decision?
3. What would it **mean** to say that one set of rules is *better* than another?
4. Given different sets of rules, how could we **test** to see which code of conduct is the *best*?
5. How is playing Pig analogous to making ethical decisions? How is it dissimilar?
6. Does it make sense to use statistics and other mathematical techniques to analyse decisions in ethics?