Activity Guide - Input and Events: Program

Your Role: Program

Version A: Asking for Input

Your Role
Your role is the **Program**. It's your job to ask each of the Inputs for their current value whenever the code says to. If the current value of a given Input matches your conditional, then **you perform** whatever behavior is in the conditional.

Other Roles
Each of the other members of your group is an Input. The Inputs will each draw a card every time the draw loop runs, which they will then show to you if asked.

Rules
- Read through the Program aloud
- When you reach an input block, ask the appropriate input for their current value
- The Input will show you their card. If it matches your condition, perform the associated action

Run the program to the right a few times, changing roles each time so that every group member gets a chance to be the Program. Once everyone is comfortable with the system, try coming up with some programs of your own.
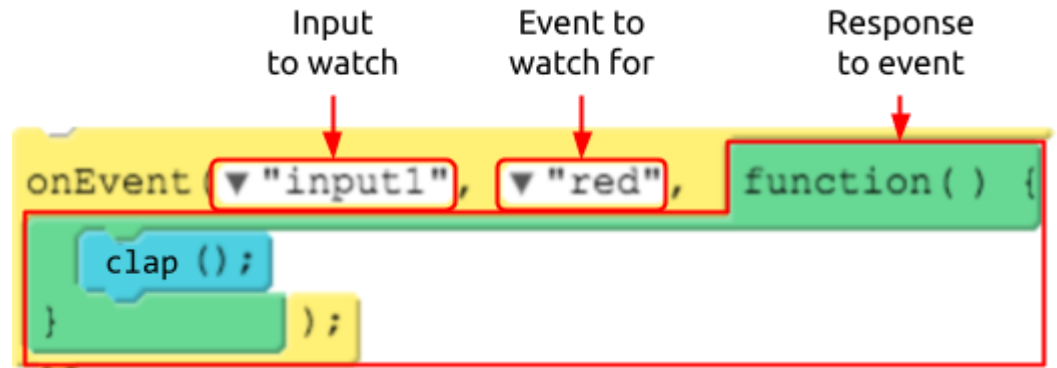
Program	Action
`function draw() {`	Start loop, each Input takes one card from the deck

`if (inputOne() == "red") {`
`    clap()`
`}`
	Program asks Input One for input Input One shows their card to the Program.
	If the card is red, Program claps.

`if (inputTwo() == "red") {`
`    stand()`
`}`
	Program asks Input Two for input Input Two shows their card to the Program.
	If the card is red, Program stands.

`if (inputThree() =="red") {`
`    sit()`
`}`
	Program asks Input Three for input Input Three shows their card to the Program.
	If the card is red, Program sits.

`}`	Return to start

Your Role: Program

Version B: Input Events

In this version the Program *does not* continually ask for values and check them with conditionals. Instead, the Program assigns each Input an *Event* to watch for.

Once an Input knows what Event to watch for, the program no longer has to worry about it. It's now the Input's job to report back to the Program if they see the event they've been assigned. A red card being drawn is considered a "red" event, while a black card could be a "black" event.

Input to watch   Event to watch for   Response to event

```
onEvent( ▼ "input1", ▼ "red", function() {
    clap();
}            );
```

Rules
- Inputs draw cards off the top of the deck continually at a rate of roughly one card per second
- The Program reads the code aloud
- When the Program reads an onEvent() block, tell the appropriate Input what Event to watch for, and how to respond
- When an Input draws a card that matches an event that they're watching, they tell the Program how to respond.

Program	Action
	All Inputs begin drawing cards from the deck once a second
onEvent("inputOne", "red", function() { clap() })	Input One starts looking for red cards. Whenever Input One draws a red card is drawn they tell Program to clap.
onEvent("inputTwo", "black", function() { jump() })	Input Two starts looking for black cards. Whenever Input Two draws a black card they Program to jump.
onEvent("inputThree", "red", function() { snap() })	Input Three starts looking for red cards. Whenever Input Three draws a red card, they tell Program to snap.

As before, run the program a few times, changing up the roles so everyone gets a chance to be the Program. Once you've got the hang of it you can try speeding up the pace of card drawing or writing programs of your own to test. If you write a new program, make sure that the Program is the one who still "runs" all of the code and performs the action.

Your Role: Input 1

Version A: Asking for Input

Your Role
Your role is the **Input 1**. It's your job to represent an input to the program by drawing a new card from the deck every time the draw loop runs, showing it to the Program if asked. The program will then decide whether to perform an action based on your input.

Other Roles
- **Program** - Runs the main program and asks for input when appropriate.
- **Inputs 2 and 3** - At the beginning of each draw loop, selects a card from the deck.
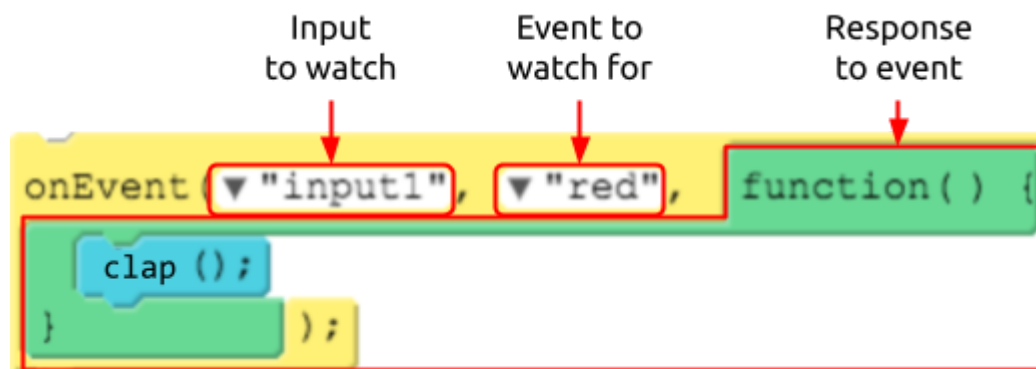
Rules
- Every time the draw loop is run, each Input draws a new card from the deck.
- If the Program asks you for input, show your card.

Your Role: Input 1

Model B: Input Events

In this version the Program *does not* continually ask for values and check them with conditionals. Instead, the Program assigns each Input an *Event* to watch for.

Once an Input knows what Event to watch for, the program no longer has to worry about it. It's now the Input's job to report back to the Program if they see the event they've been assigned. A red card being drawn is considered a "red" event, while a black card could be a "black" event.

Input to watch → **Event to watch for** → **Response to event**

```
onEvent ( ▼ "input1", ▼ "red",  function () {
    clap ();
}           );
```

Rules
- When the program begins, start drawing cards from the deck at a rate of roughly one per second
- If the Program assigns you an Event, write down the details in your Events to Watch table
- If you draw a card that matches one of the Events in your table, tell the Program to do whatever is in the *Response* column

Input 1 Events to Watch

Event	Response

As before, run the program a few times, changing up the roles so everyone gets a chance to be the Program. Once you've got the hang of it you can try speeding up the pace of card drawing or writing programs of your own to test. If you write a new program, make sure that the Program is the one who still "runs" all of the code and performs the action.

Your Role: Input 2

Version A: Asking for Input

Your Role
Your role is the **Input 2**. It's your job to represent an input to the program by drawing a new card from the deck every time the draw loop runs, showing it to the Program if asked. The program will then decide whether to perform an action based on your input.

Other Roles
- **Program** - Runs the main program and asks for input when appropriate.
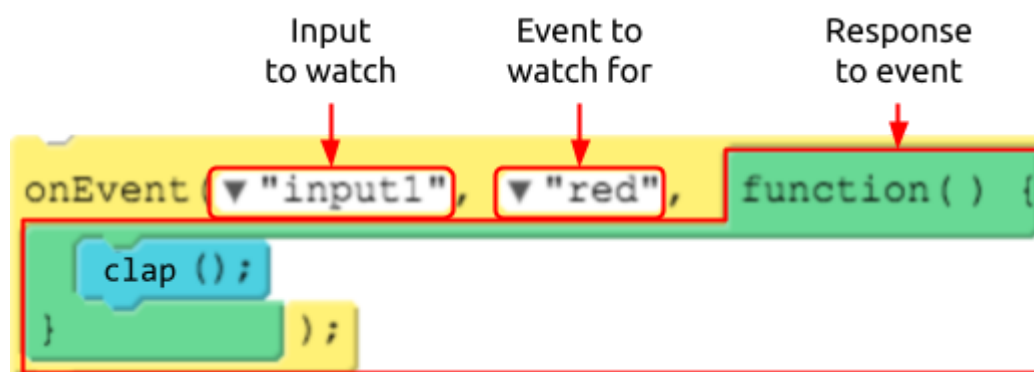- **Inputs 1 and 3** - At the beginning of each draw loop, selects a card from the deck.

Rules
- Every time the draw loop is run, each Input draws a new card from the deck.
- If the Program asks you for input, show your card.

Your Role: Input 2

Model B: Input Events

In this version the Program *does not* continually ask for values and check them with conditionals. Instead, the Program assigns each Input an *Event* to watch for.

Once an Input knows what Event to watch for, the program no longer has to worry about it. It's now the Input's job to report back to the Program if they see the event they've been assigned. A red card being drawn is considered a "red" event, while a black card could be a "black" event.

Input to watch   Event to watch for   Response to event

```
onEvent ( ▼ "input1", ▼ "red",     function () {
     clap ();
}              );
```

Rules
- When the program begins, start drawing cards from the deck at a rate of roughly one per second.
- If the Program assigns you an Event, write down the details in your Events to Watch table.
- If you draw a card that matches one of the Events in your table, tell the Program to do whatever is in the *Response* column.

Input 2 Events to Watch

Event	Response

As before, run the program a few times, changing up the roles so everyone gets a chance to be the Program. Once you've got the hang of it you can try speeding up the pace of card drawing or writing programs of your own to test. If you write a new program, make sure that the Program is the one who still "runs" all of the code and performs the action.

Your Role: Input 3

Version A: Asking for Input

Your Role

Your role is the **Input 3**. It's your job to represent an input to the program by drawing a new card from the deck every time the draw loop runs, showing it to the Program if asked. The program will then decide whether to perform an action based on your input.

Other Roles
- **Program** - Runs the main program and asks for input when appropriate.
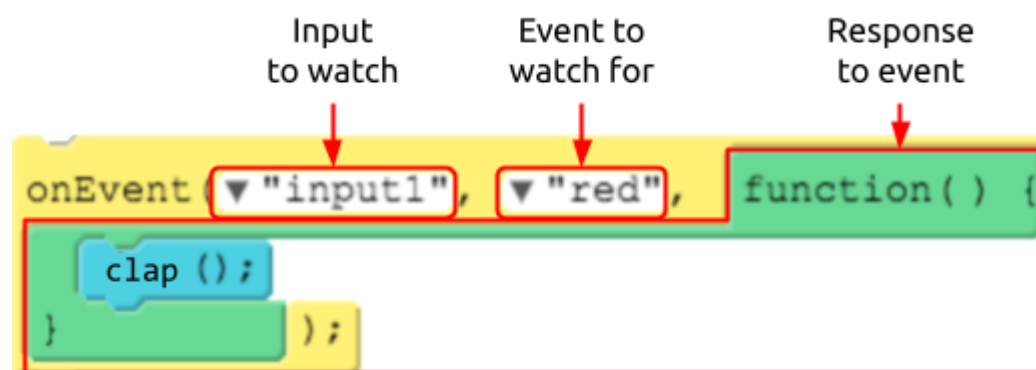- **Inputs 1 and 2** - At the beginning of each draw loop, selects a card from the deck.

Rules
- Every time the draw loop is run, each Input draws a new card from the deck.
- If the Program asks you for input, show your card.

Your Role: Input 3

Model B: Input Events

In this version the Program *does not* continually ask for values and check them with conditionals. Instead, the Program assigns each Input an *Event* to watch for.

Once an Input knows what Event to watch for, the program no longer has to worry about it. It's now the Input's job to report back to the Program if they see the event they've been assigned. A red card being drawn is considered a "red" event, while a black card could be a "black" event.

Input to watch   Event to watch for   Response to event

```
onEvent ( ▼ "input1", ▼ "red",  function() {
    clap ();
}            );
```

Rules
- When the program begins, start drawing cards from the deck at a rate of roughly one per second.
- If the Program assigns you an Event, write down the details in your Events to Watch table.
- If you draw a card that matches one of the Events in your table, tell the Program to do whatever is in the *Response* column.

Input 3 Events to Watch

Event	Response

As before, run the program a few times, changing up the roles so everyone gets a chance to be the Program. Once you've got the hang of it you can try speeding up the pace of card drawing or writing programs of your own to test. If you write a new program, make sure that the Program is the one who still "runs" all of the code and performs the action.