Explore
COLD CLOSURES COVE

LEVEL 2

COLD CLOSURES COVE

A PACKAGE DEAL

Guess what? Congratulations! You've already made a basic closure!

```javascript
function buildTicket ( allRides, passRides, pick ) {
  if(passRides[0] == pick){
    var pass = fastAvail.shift();
    return function ( ) { alert("Quick! You've got a Fast Pass to " + pass + "!");
      };
  } else {
    for(var i = 0; i<allRides.length; i++){
      if(allRides[i][0] == pick){
        return function () { alert("A ticket is printing for " + pick + "!\n" +
                      "Your wait time is about " + allRides[i][1] + " minutes.");
      };
    }
  }
}
```

The entire contents of one of these inner functions will still be available OUTSIDE the outermost function.

Returning a function from a function, complete with variables from an external scope, is called a closure.

A PACKAGE DEAL

A closure wraps up an entire environment, binding necessary variables from other scopes.

```
function  testClosure ( ) {


    var x = 4;        ⟵  Local Variable only!
     return x;



}
```

```
testClosure();
                    → 4
```

```
x;
```
→ undefined

A function's local variables aren't available once the function's scope is closed!

A PACKAGE DEAL

A closure wraps up an entire environment, binding necessary variables from other scopes.

The inner function can access the outer function's variables, because they "feel" like global variables.

```
function  testClosure ( ) {
        var x = 4;
        function closeX ( ) {
                return x;
        }
        return closeX;
}
```

Notice x does not need to be "stored" anywhere in closeX, not even as a parameter!

A PACKAGE DEAL

A closure wraps up an entire environment, binding necessary variables from other scopes.

```
function  testClosure ( ) {
        var x = 4;
        function closeX ( ) {
                return x;
        }
        return closeX;
}
```

```
var checkLocalX = testClosure();
```

```
checkLocalX();
```
→ 4

Even though testClosure has finished operating, its local variable is now bound within checkLocalX.

CLOSURES HELP IN FUNCTION "CONSTRUCTION ZONES"

A closure can make the creation of very similar functions ultra-efficient.

```javascript
function buildCoveTicketMaker( transport ) {

    return function ( name ) {
      alert("Here is your transportation ticket via the " + transport + ".\n" +
            "Welcome to the Cold Closures Cove, " + name + "!");
    }
}
```

LEVEL TWO

CLOSURES HELP IN FUNCTION "CONSTRUCTION ZONES"

A closure can make the creation of very similar functions ultra-efficient.

```javascript
function buildCoveTicketMaker( transport ) {

        return function ( name ) {
          alert("Here is your transportation ticket via the " + transport + ".\n" +
                "Welcome to the Cold Closures Cove, " + name + "!");
        }
}
```

```javascript
var getSubmarineTicket = buildCoveTicketMaker("Submarine");
```

```javascript
var getBattleshipTicket = buildCoveTicketMaker("Battleship");
```

```javascript
var getGiantSeagullTicket = buildCoveTicketMaker("Giant Seagull");
```

We give buildCoveTicketMaker the mode of transportation, which is closed into the returned anonymous function.

CLOSURES HELP IN FUNCTION "CONSTRUCTION ZONES"

A closure can make the creation of very similar functions ultra-efficient.

```
var getSubmarineTicket = buildCoveTicketMaker("Submarine");
```

```
var getBattleshipTicket = buildCoveTicketMaker("Battleship");
```

```
var getGiantSeagullTicket = buildCoveTicketMaker("Giant Seagull");
```

CLOSURES HELP IN FUNCTION "CONSTRUCTION ZONES"

A closure can make the creation of very similar functions ultra-efficient.

getSubmarineTicket

getBattleshipTicket

getGiantSeagullTicket

BEWARE: BOUND VARIABLES WON'T BE EVIDENT IN THE STORED FUNCTION

Examining the contents of our new variables doesn't reveal closures.

```
getSubmarineTicket;
```
```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

Holds **"Submarine"**

```
getBattleshipTicket;
```
```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

Holds **"Battleship"**

```
getGiantSeagullTicket;
```
```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

Holds **"Giant Seagull"**

BEWARE: BOUND VARIABLES WON'T BE EVIDENT IN THE STORED FUNCTION

Examining the contents of our new variables doesn't reveal closures.

```
getSubmarineTicket;

function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}

getBattleshipTicket;

function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}

getGiantSeagullTicket;

function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

Until we call any of these functions with a parameter, the name variable is still undefined.

LET'S MAKE SOME TICKETS!

Passing a name to any of our ticket makers will complete our ticket-making process.

`getSubmarineTicket;`

```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

`getBattleshipTicket;`

```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

`getGiantSeagullTicket;`

```
function ( name ) {
    alert("Here is your transportation ticket via the " + transport + ".\n" +
        "Welcome to the Cold Closures Cove, " + name + "!");
}
```

LET'S MAKE SOME TICKETS!

Passing a name to any of our ticket makers will complete our ticket-making process.

```
getSubmarineTicket;
```

```
getBattleshipTicket;
```

```
getGiantSeagullTicket;
```

LET'S MAKE SOME TICKETS!

Passing a name to any of our ticket makers will complete our ticket-making process.

```
getSubmarineTicket("Mario");
```

```
getBattleshipTicket("Luigi");
```

```
getGiantSeagullTicket("Bowser");
```

LET'S MAKE SOME TICKETS!

Passing a name to any of our ticket makers will complete our ticket-making process.

```
getSubmarineTicket("Mario");
```

The page at https://www.codeschool.com says:

Here is your transportation ticket via the Submarine. Welcome to the Cold Closures Cove, Mario!

OK

```
getBattleshipTicket("Luigi");
```

The page at https://www.codeschool.com says:

Here is your transportation ticket via the Battleship. Welcome to the Cold Closures Cove, Luigi!
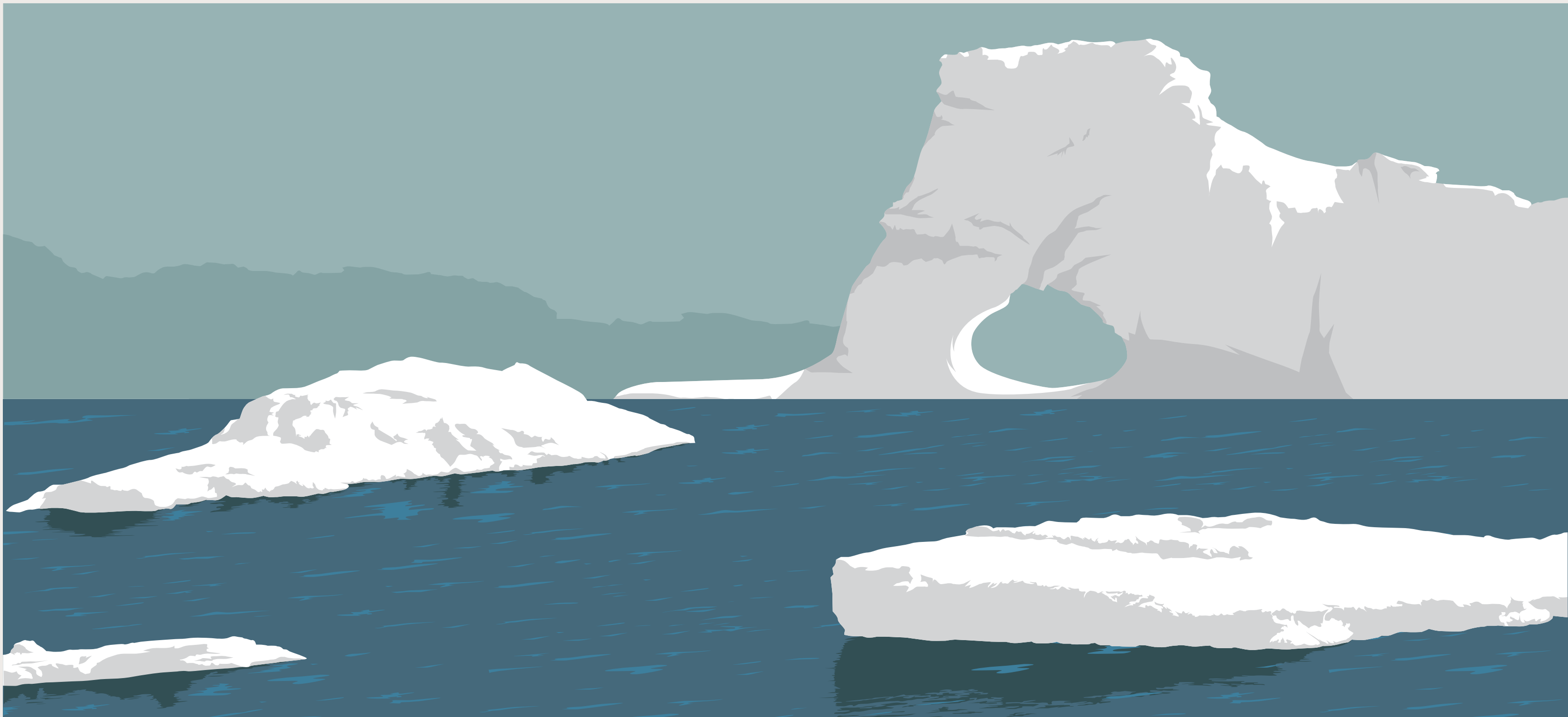
OK

```
getGiantSeagullTicket("Bowser");
```

The page at https://www.codeschool.com says:

Here is your transportation ticket via the Giant Seagull.
Welcome to the Cold Closures Cove, Bowser!

OK

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