

Lambda Expressions

The next shortcut, *lambda expressions*, are great for situations when you need to pass a method as an argument.

In the past exercise, we used `IsEven()` to check that an even value exists in the array `numbers`:

```
int[] numbers = {1, 3, 5, 6, 7, 8};

public static bool IsEven(int num)
{
    return num % 2 == 0;
}

bool hasEvenNumber = Array.Exists(numbers, IsEven);
```

When using the original definition (with curly braces and `return`), it takes multiple lines to define the `IsEven()` method and other developers will need to jump around our code to find the definition. With a lambda expression, we can define `IsEven()` directly in the method call. We don't even need to give it a name:

```
bool hasEvenNumber = Array.Exists(numbers, (int num) => num % 2 == 0);
```

This might look similar to an expression-bodied definition. It sort of is! What makes a lambda expression unique is that it is an *anonymous method*: it has no name.

Generally lambda expressions with one expression (like the above example) take this form. They use the fat arrow, no curly braces, and no semicolon (`;`):

```
(input-parameters) => expression
```

Lambda expressions with more than one expression use curly braces and semicolon:

```
(input-parameters) => { statement; }
```

Here's an example of the second structure, which checks if any element in `numbers` is a multiple of 12 and greater than 20:

```
bool hasBigDozen = Array.Exists(numbers, (int num) => {  
    bool isDozenMultiple = num % 12 == 0;  
    bool greaterThan20 = num > 20;  
    return isDozenMultiple && greaterThan20;  
});
```

Since this lambda expression includes multiple expressions (3 in this case), then we must use curly braces and semicolons.

☒ Instructions

1.

Find the line where `Array.Exists()` is used.

Replace `HitGround` with a lambda expression that achieves the same result. It should return `true` if its input equals `"meteorite"`.

Hint



You can find the original `HitGround()` definition at the bottom of the file.

Here's an example lambda expression:

```
bool hasEvenNumber = Array.Exists(numbers, (int num) => num % 2 == 0 );
```