**JavaScript Review**

**Numbers and Strings**

JavaScript can understand different kinds of data like numbers and string. Try entering a number in the console:

> 2

Similarly, try entering any string in the console:

> "Hello world"

Remember, strings are enclosed by quotes

**Variables**

You can store data inside containers (variables) using "var"

Can you store your name inside a variable?

> var name = "Rajeev"

Now call the variable to see what is inside it.

> name

You can see your name printed in the console.

Strings are objects in JavaScript and they have some properties and functions defined. You can try some of them.

name.length

name.toUpperCase()

You will be able to see your name in all caps.

You can also store any number inside the variable.

> var num = 5

You can also convert a string into a number:

parseInt("123")

**Arithmetic Operations**

You can use arithmetic operations on numbers using arithmetic operators (+ , - , /, \*, %).

*Note: Remind students that modulo(%) sign gives you a remainder between two numbers.*

You can try doing different arithmetic operations on the console.

2+3

2-3

5\*7

36/12

12%5

Try using '+' arithmetic operator on strings and guess what will happen:

"Hi" + "Friend"

Strings get joined together when you add them.

Now try using any other arithmetic operation on strings like division (/)

"a" / "b"

You will get **NaN** which means not a number.

Now try dividing any number with 0:

1/0

You will get **Infinity** as an answer.

**Booleans**

There is another boolean data type in JavaScript which can hold only **true** or **false**

var bool = true

Comparison operators (>,<,>=,<=,===, !=) also evaluate to a boolean value. Try to use any of the comparison operators with numbers on the console

2===3

This will print false on the console.

**Other data types**

There are two other kinds of data in JavaScript - **null** and **undefined**

**null** is used when you want a variable to hold nothing. **undefined** is the value inside a variable when you have forgot to assign anything to it.

var test

Now try to see what is inside 'test'

test

**Conditional programming**

We can use if-else block to create conditional programming. Try writing a simple if-else statement:

if(3>2){

console.log("Happy")

}

else{

console.log("Not Happy")

}

If the condition evaluates to **true**, if block is executed; otherwise else block is executed.

Switch statement is another way in which we can do conditional programming.

var name = "My name";

switch(name) {

case "My name":

console.log("Condition 1");

break;

case "my Name":

console.log("Condition 2");

break;

default:

console.log("None of the conditions are true");

}

**Loops**

Computers do not like to repeat themselves. We use loops to perform repeated function. There are two kinds of loops - **for** and **while** loop.

Write a simple **for** loop:

for(var i=0; i<=5; ++){

console.log(i)

}

Write a simple **while** loop:

var i =0

while (i<=5){

console.log(i)

i=i+1

}

**Arrays**

Arrays are a type of data structure where you can use single variable to store a list of items.

Write an array which stores a list of items.

var friends = ["friend1","friend2","friend3"]

You can access any item in the list using indexes. *Note: Counting starts from 0 on computers*

friends[0]

You can also loop over all the items using **for-each** loop

for(var index in friends){

console.log(friends[index])

}

Arrays are also objects in javaScript. They have some properties and function defined. For example, you can get the length of the array using length property:

friends.length

You can also push new elements into the array using push():

friends.push("friend4")

You can see the elements in the friends array now:

friends

You can also pop out the last element from the array using pop():

friends.pop();

**Functions**

Javascript has certain in-built functions which you can use. You can also write your own functions. Write a function to calculate the circumference of a circle. It should take radius as the argument.

function circumference(radius){

var circumference = 2 \* 3.14 \* radius

return circumference

}

Now you can use the circumference functions to calculate the radius of any circle.

circumference(5)

**Objects**

We used classes to design blue prints of objects in javascript and then used **new** to create new object using the class.

Internally JavaScript creates a new object using *new Object()*

var paddle = new Object();

You can assign new properties and functions to test object.

Ask the student to assign a new property and function to a test object

paddle.length = 60

paddle.showLength = function(){

console.log(paddle.length);

}

Call paddle.showLength() to see the length of the paddle.

paddle.showLength()

Call paddle object to see what's stored inside the paddle.

paddle