



Computer Science and ICT

at Crocus Plains

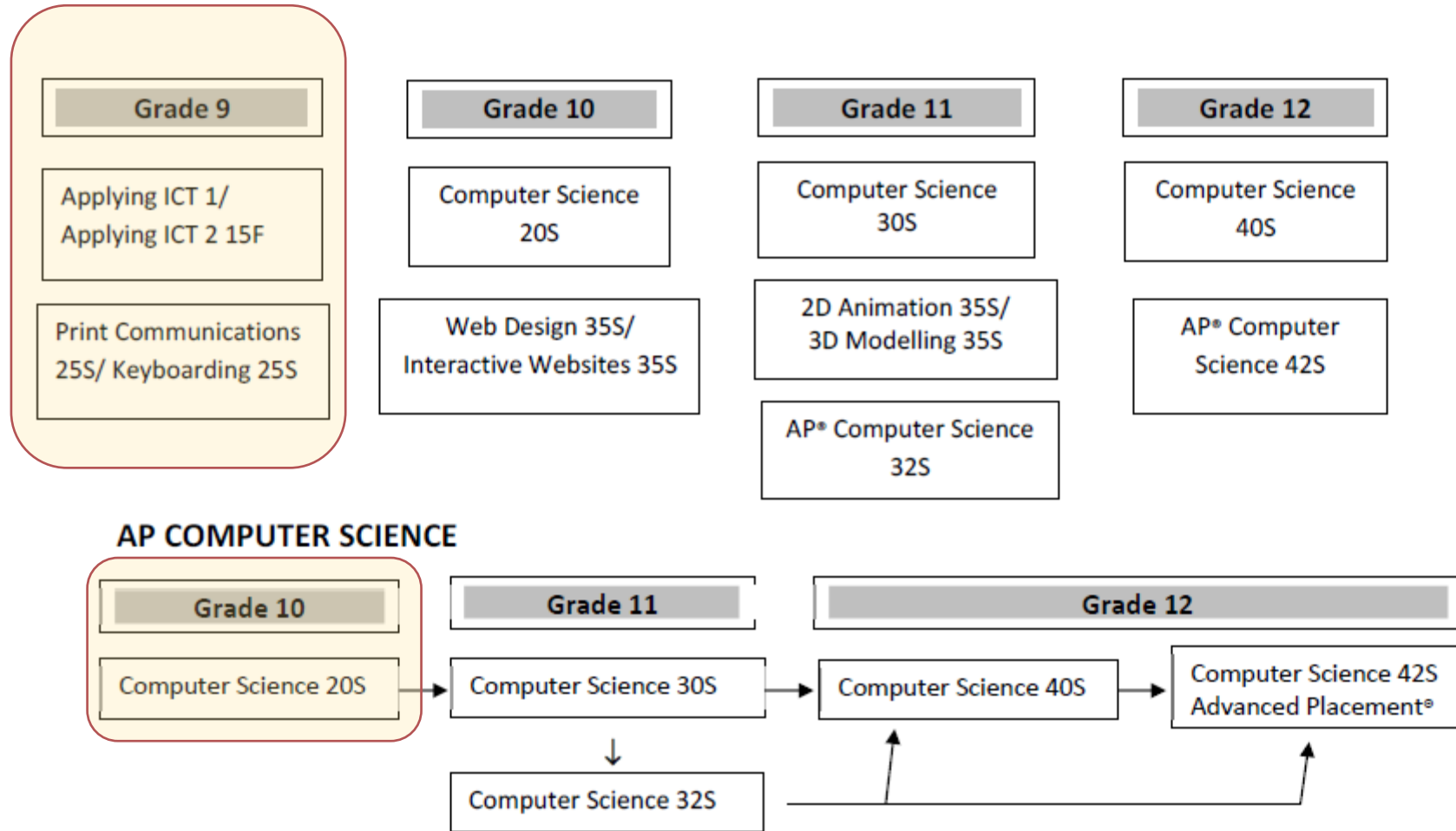




**What is
Computer Science?**

COMPUTER SCIENCE AND ICT

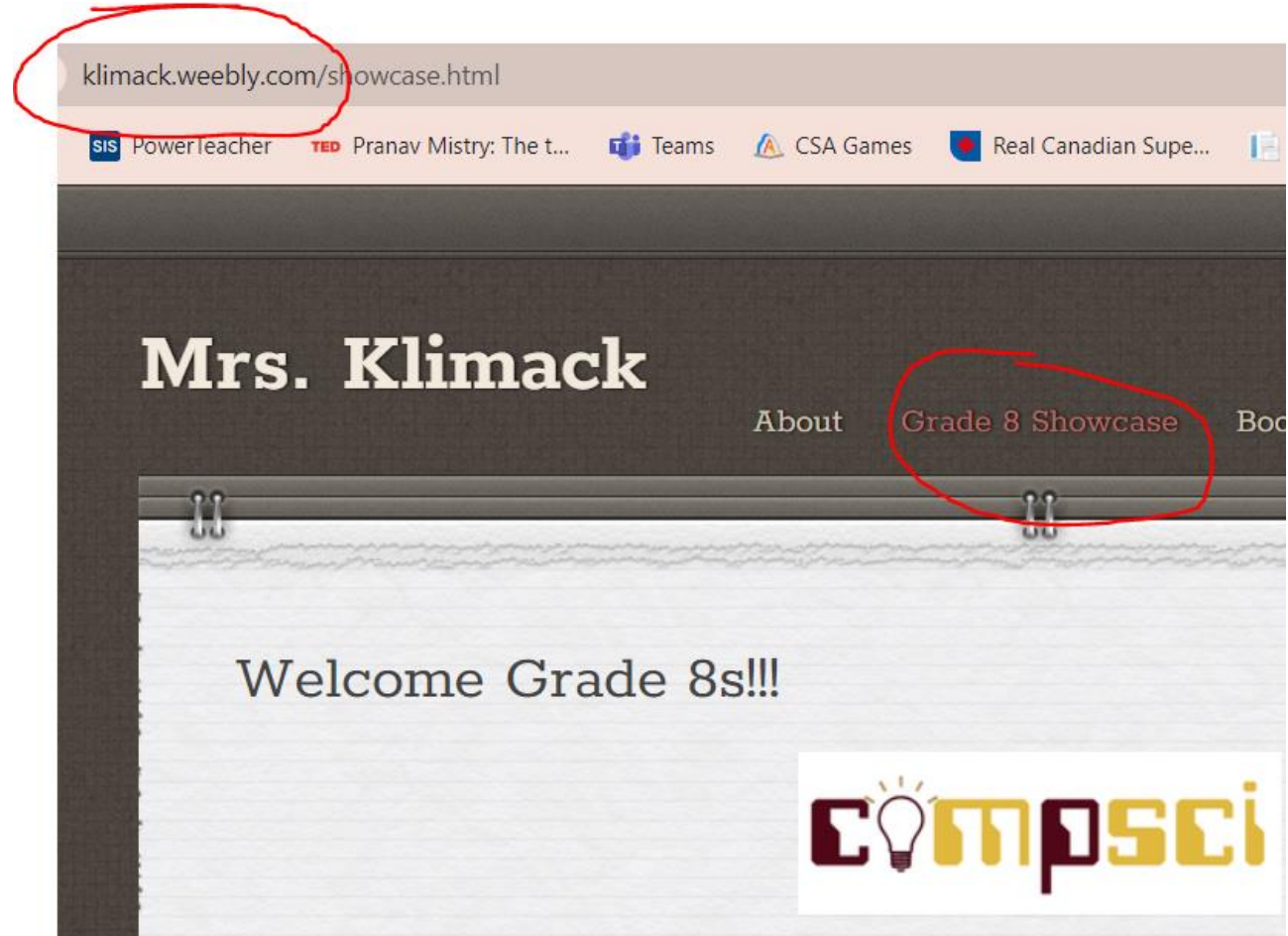
The Manitoba Department of Education Senior Years Information and Communication Technology states: "The emphasis of ICT courses is on students learning to solve problems, accomplish tasks, and express creativity, both individually and collaboratively. Students will learn to use today's technology for tasks at school and in their personal lives. More importantly, students will learn to adapt to change and be able to independently learn and use new technology as it evolves throughout their lives. Each student should be knowledgeable about technology, be able to use technology readily and effortlessly, and be able to make decisions about her or his use of technology."



Note: This stream may be started in Grade 9 to ensure completion in spite of course conflicts that may arise.

Getting Started

www.klimack.weebly.com/showcase



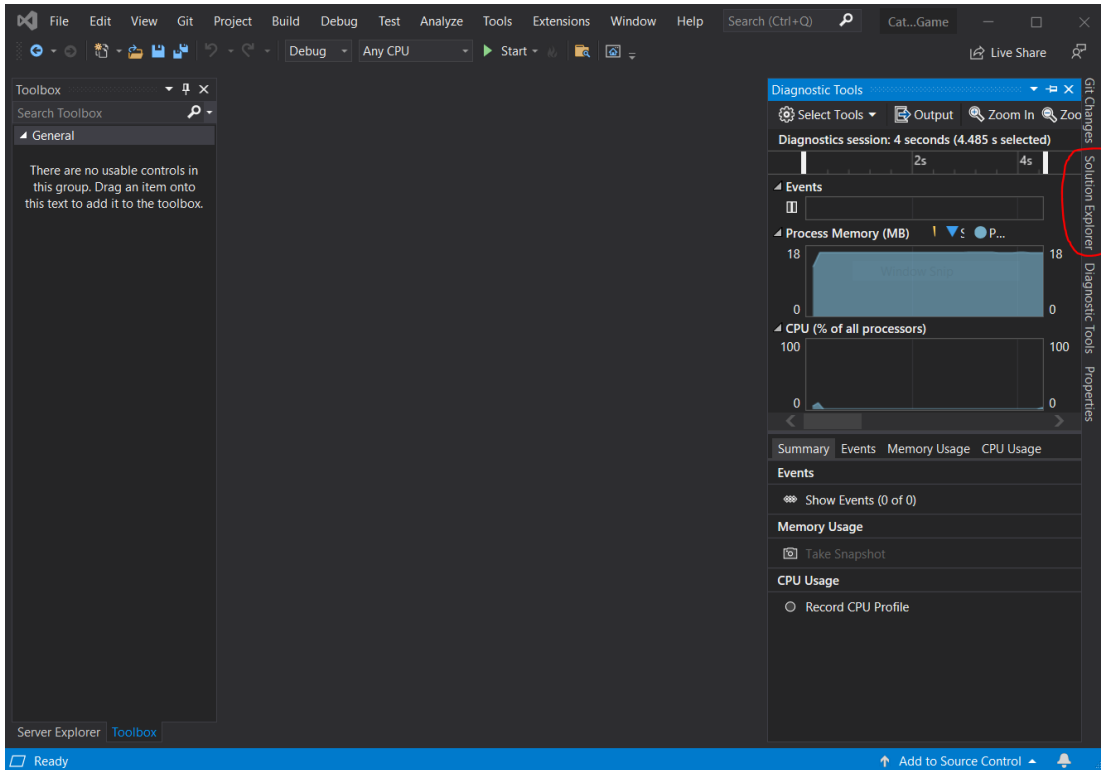
Getting Started



To do:

- Open Visual Studio 2019
- Choose to **Open** a project
- Find your project under **Documents**. Your group number is on the whiteboard.

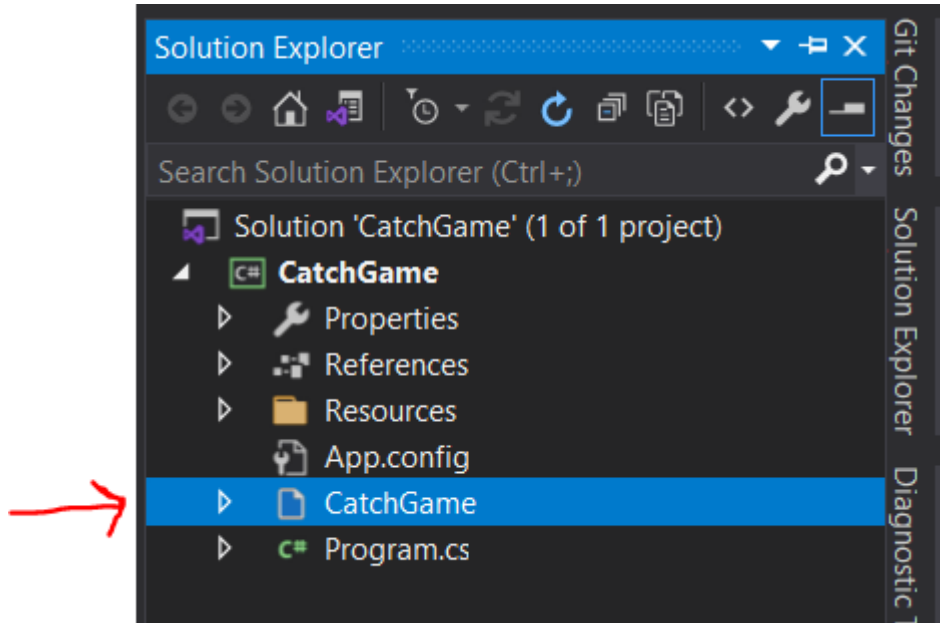
Getting to your project



To do:

- Find the **Solution Explorer** at the right
- Click it to open it

Getting to your project



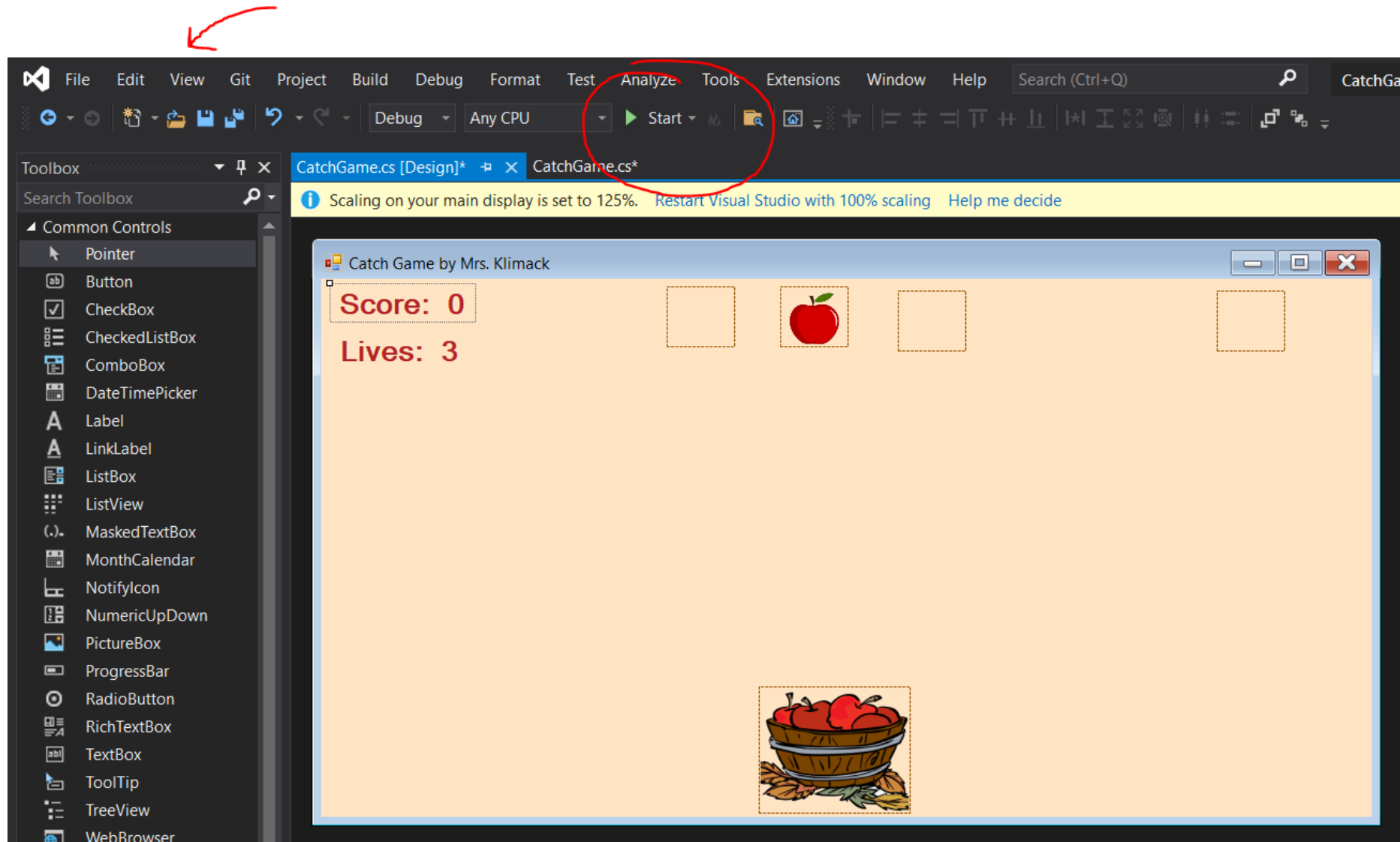
To do:

- Single click *CatchGame.cs*

From the menu:

- Choose View, Designer
- Choose View, Code

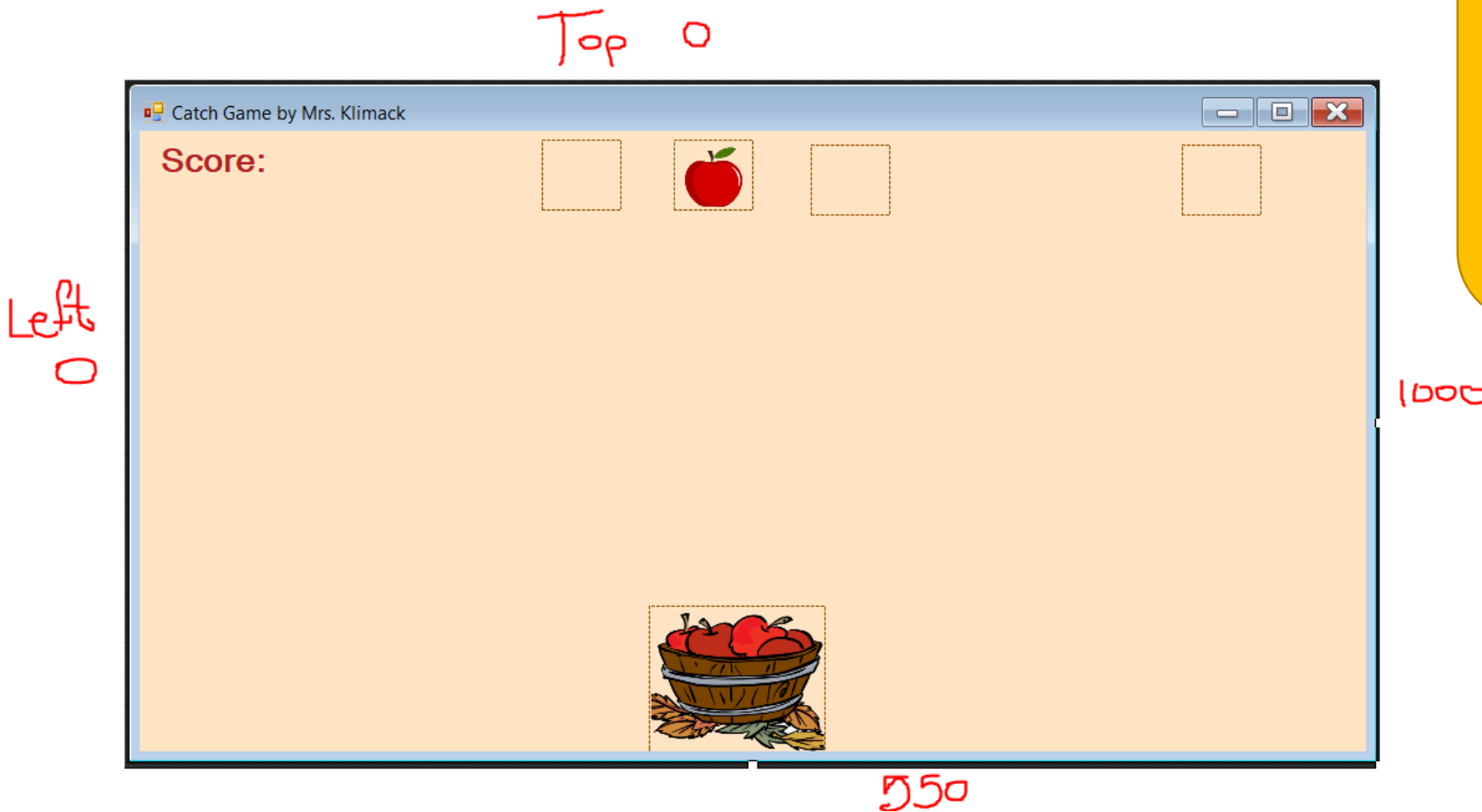
Running a Project



Moving the Basket

- The basket moves left, but there is a problem moving to the right

See if you can fix the basket movement



The Code

Don't get frustrated.



Coding is a different way of thinking.

The completed code is available for you on the website if you get really stuck. You can click it to see the required code.



Other Fruit

```
1 reference
public CatchGame()
{
    InitializeComponent();

    //load the images
    picFruit1.Image = Properties.Resources.apple;

    //there are 2 more pictureboxes for fruit and one for the wormy apple
    //try to load them here
    //just start typing the line you see above...help will appear!
}
```

See if you can add fruit to the other 2 fruit picture boxes. There is cherries and an orange.

Falling Fruit

Add code in the timer event to have the other fruit fall down.

```
1 reference
private void tmrGame_Tick(object sender, EventArgs e)
{
    //this is your timer code
    //every time the timer ticks, this code runs

    Random rand = new Random();

    //the fruit falls down
    picFruit1.Top = picFruit1.Top + 10;

    //make the other fruit fall down at different rates
```

Reset Fruit at Bottom of Window

```
//reset when it falls off form
if (picFruit1.Top > this.Height)
{
    picFruit1.Top = -100; //put up above the window
}
//reset the other fruit here
```

Note:

{ → begin

} → end

Add code to make the fruit reset above the window when gets to the bottom. Have it reset at different heights above the form. (You can copy and paste.)

Catch the Fruit

```
if (picFruit1.Bounds.Intersects(picBasket.Bounds)) //if the fruit collides with the basket
{
    score = score + 1; //make the score go up
    lblScore.Text = "Score: " + score.ToString(); //show the score
    picFruit1.Top = -100; //set the fruit above the window
    picFruit1.Left = rand.Next(0, this.Width); //find a random horizontal coordinate for the fruit
}

//add other intersections here
```

Add code to catch the fruit. Reset it above like at different heights. You can give each fruit a different score value, too.

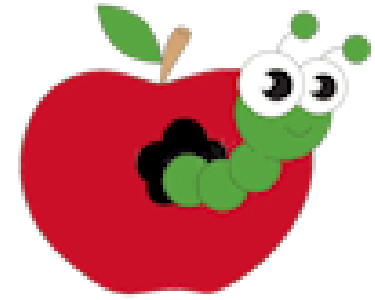
Random Horizontal

- If you miss the fruit, it resets above the form but in the same horizontal location it was before.
- You can add more code to the if statement as long as it is between the { and the }

```
//reset when it falls off form
if (picFruit1.Top > this.Height)
{
    picFruit1.Top = -100; //put up above the window
}
```

Add code to find a random horizontal location when the fruit hits the bottom of the form.

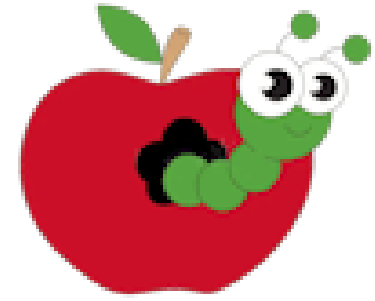
Apple Worm



- There is an enemy picture box and an apple worm picture for it

Add the wormy apple to the last picture box and make it fall and reset just like all the other fruit.

Lives



- Your lives are not changing
- If you catch the wormy apple your lives should go down by 1
- See if you can find where the score goes *up* by 1
- Use that same logic to write code to make the *lives go down* by one.

Add code to make the lives go down by 1 when the basket collides with the wormy apple.

Game Over

- If you lives gets to 0, it is game over
- In this case we want to stop the timer.
- The code is already in the program for you.

Check out the game over code

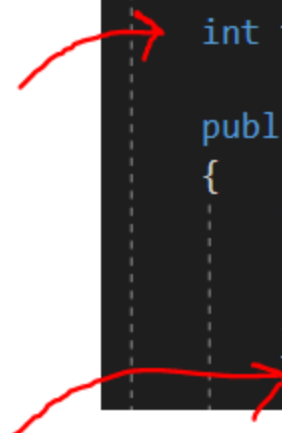
Level Up

- If your score gets to be a certain number it might be good to level up
- In this case, that means speed it up
- Here is where it is set initially

```
public partial class CatchGame : Form
{
    int score = 0;
    int lives = 3;
    int timerSpeed = 200;

    public CatchGame()
    {
        InitializeComponent();

        //set the timer speed
        tmrGame.Interval = timerSpeed;
    }
}
```



Level Up

- Note the place where we code the game over

Try to write code to speed the game up if the score is greater than 5.

Hints:

- `if(score>=5)`
- `timerSpeed` needs to get smaller

Other things

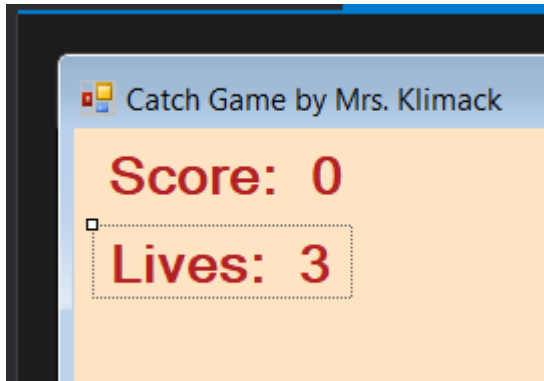
We don't have a lot of time so if you got this far, you did great!



BackColor Property

Be sure the window is selected and find the Properties window
Modify the Backcolor property

ForeColor Property



**Select a *label* and change the Forecolor in Properties.
Change the Font, as well.**



- Applying ICT (lots of bytes of lots of things)
- Print Communications/Desktop Publishing
- All levels of programming in Computer Science from beginner to University
- Web Design
- Intro to Game Development

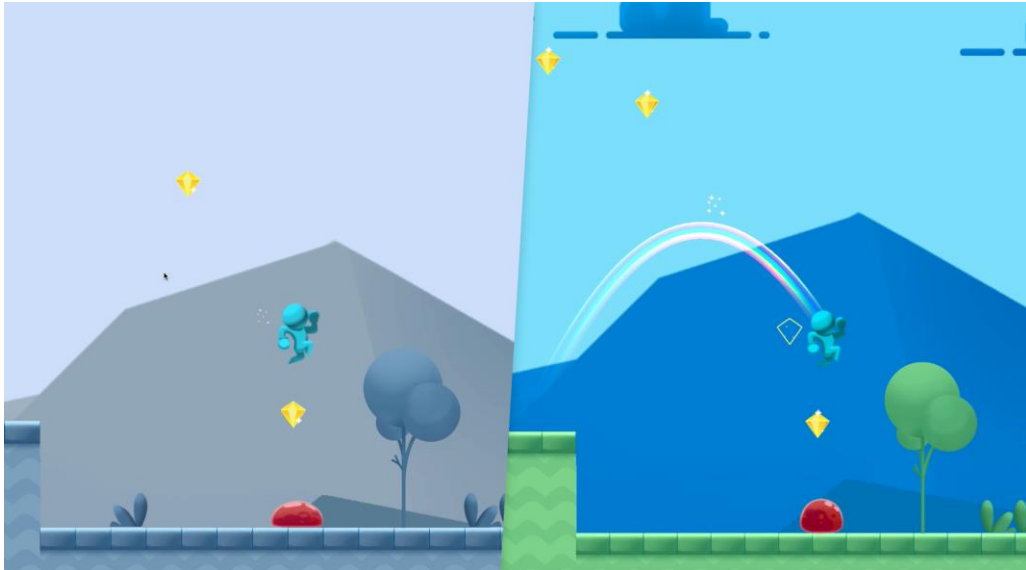


Comp Sci Programming Languages

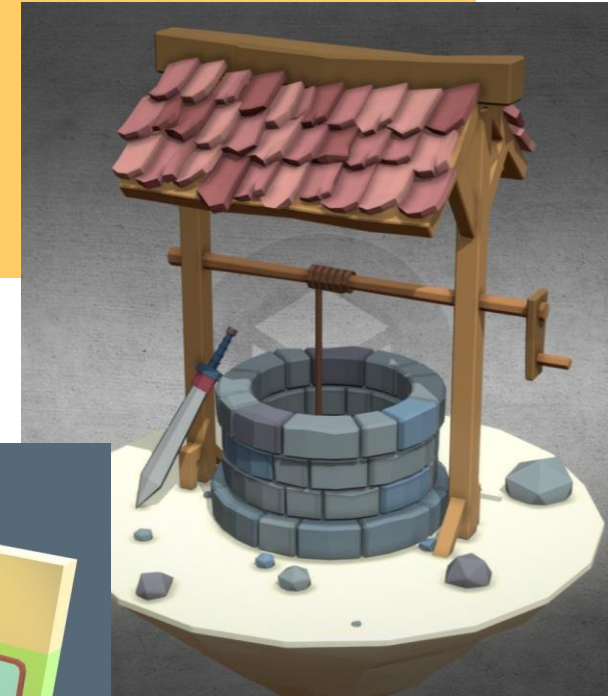
- Grade 10/11 → C# (C Sharp)
- Pre-AP → C# and other (Monogame, etc.)
- Grade 12/AP → Java

Intro to Game Development

Unity/C#

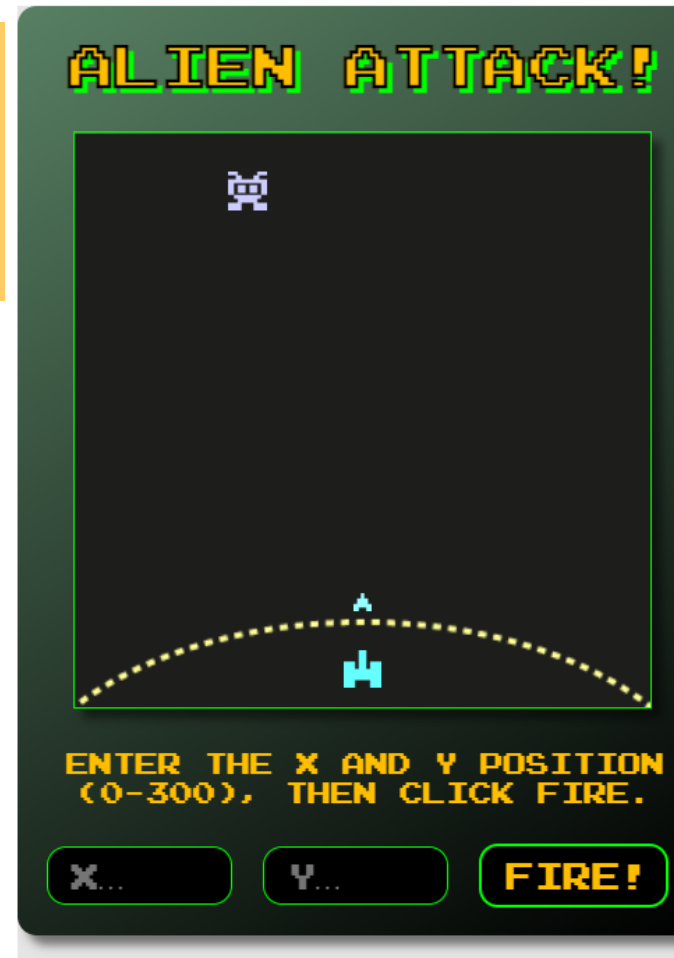


Blender



Web Design

- HTML
- CSS
- JavaScript



Where to more about Crocus courses?

- Go to www.klimack.weebly.com
- Email klimack.Cheryl@bsd.ca
- Email Brykaliuk.zach@bsd.ca



Computer Science and ICT

Courses to consider:

Print Communications/Keyboarding

- * If you can't key without looking at your hands, take this.
- * Learn keyboarding and desktop publishing

Applying ICT 1 & 2

- * Intro to many things computer...3D modeling, spreadsheets, photo editing, desktop publishing, programming, video editing, 2D animation, etc.
- * Good for everyone

Computer Science 205

- * Intro to programming using C Sharp (C#)

COMPOSE



Email klimack.cheryl@bsd.ca for more information.



for attending today!