



CODE | PROGRAMMER
to LEARN | pour APPRENDRE

TERRY FOX TRIBUTE



CARDS

with



lynxcoding.club



CODE **to** LEARN.ca

With funding from

Canada

TakingITGlobal
INSPIRE INFORM INVOLVE
INSPIRER INFORMER ENGAGER

GETTING STARTED

Get a free LYNX Account and Understand the Layout

Accounts are free for Canadians for the 2023-24 school year. Thank you Government of Canada!



Get a LYNX Account

Details at lynxcoding.club/Home/Help >> [All about Registration and types of Accounts](#)

STUDENTS

Step 1. Get a *free Trial Account*. Click **Login/Register** located in the top, right corner of lynxcoding.club and register using your Google or Microsoft account.

Step 2. Now upgrade to an **INDIVIDUAL Account**.

With it, you can save as many projects as you want!

In the top right corner, click on your name and choose **Profile**. On the left side, beside the word **Trial** click the yellow **Change** button and **select INDIVIDUAL** subscription. It's free for Canadians!

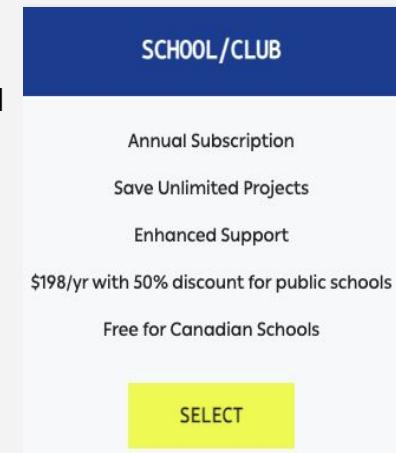


TEACHERS

Step 1. Get a *free Trial Account*. Click **Login/Register** located in the top, right corner of lynxcoding.club and register using your Google or Microsoft account.

Step 2. Now upgrade to a **School/Club Account**. In the top right corner, click on your name and choose **Profile**. Beside the word **Trial** click the yellow **Change** button and **select SCHOOL/CLUB** subscription. Free in Canada.

Step 3. Create a Coding Club and invite your students.
See details at [All about Registration and types of Accounts](#).



The LYNX User Interface

The diagram illustrates the LYNX User Interface with several labeled components:

- Share**: Located in the top-left corner of the main workspace.
- Save**: Located in the top-left corner of the main workspace.
- Add Objects**: Located in the top-left corner of the main workspace.
- Files**: Located in the top-left corner of the main workspace.
- Procedures**: Located in the top-left corner of the main workspace.
- Clipart**: Located in the top-left corner of the main workspace.
- Project Tree**: Located in the top-left corner of the main workspace.
- Settings**: Located in the bottom-left corner of the main workspace.
- My Projects**: Located in the bottom-left corner of the main workspace.
- Commands**: Located in the bottom-left corner of the main workspace.
- Help**: Located in the bottom-left corner of the main workspace.
- Name your Project**: A callout pointing to the title bar of the main workspace, which displays "My project - page1".
- Procedure Pane**: A callout pointing to the Procedures panel on the left side of the interface.
- Work Area (Page)**: A callout pointing to the large central workspace area where a character is shown.
- Turtle**: A callout pointing to the character icon in the Work Area.
- Clipart Pane**: A callout pointing to the Clipart panel on the left side of the interface.
- Command Centre**: A callout pointing to the bottom-right corner of the main workspace.

The Procedures panel contains the following pseudocode:

```
1 ; This is an example of a procedure. Type the word DrawSquare in the Command Centre (the area below the white Work Area)
2
3 to DrawSquare
4 pendown
5 repeat 4 [
6 forward 100
7 right 90
8 ]
9 end
10
```

The Clipart panel displays a grid of various icons, including people, animals, and objects.

The BIG Picture of this Terry Fox coding project

This is what students will learn in the next Slides. We will show you how to do this!

1. **Log in and open the *Terry Fox Tribute* Template project.**
2. **Add a *background* to their Page.**
3. **Add a *turtle*, and name it *Terry*.**
4. **Get *Terry* running! First, as a *Turtle* then as a 3 frame *Terry Fox* animation**
5. **Teach *LYNX* a new command with a *Procedure* called *Animate* to execute the running animation!**
6. **Add a *button* to launch the *Animate* procedure**
7. **Add another turtle and make it a *Canadian flag*.**
8. **Add a *Text box* with a description of the *Terry Fox Marathon of Hope*.**

AFTER doing the things described on the previous slide



A student project **COULD** look like this

START IN THE RIGHT PLACE!

Making sure you create your Project **INSIDE** your Club

TWO WAYS



1. Choose the **Bookmark for the Club**.

2. You should see **Terry Fox Club** in the middle of the screen and 2 projects beneath: **Terry Fox Steps** and **Terry Fox Tribute**.

3. You are **in the right place!**



1. Go to lynxcoding.club. Log-in.

2. Click on your name, use the arrow to find **Terry Fox Club** and select it.

3. If you see **Terry Fox Club** in the middle of the screen and 2 projects beneath, **Terry Fox Steps** and **Terry Fox Tribute**, you are in the right place!

Open the Terry Fox Tribute Template!

Make the Template project **your** project and **SAVE** it

4. Open the **Terry Fox Tribute** project. It will appear in **Player** mode. We want you to personalize it, so click on **Edit**. You are now in the **Editor**.

EDIT

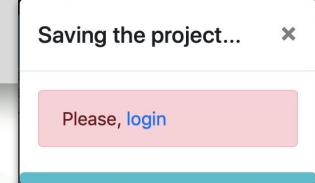
5. In the Top left corner, change the **name** of the Project to something personal, e.g. **Terry Fox Tribute by Your Initials**.



6. In the Top left corner, Click this icon: This will **Save** your project up to the Cloud. There is **NO** autosave so remember to **SAVE** often.



If you weren't logged-in yet, LYNX will ask you to log-in first.



Settings!

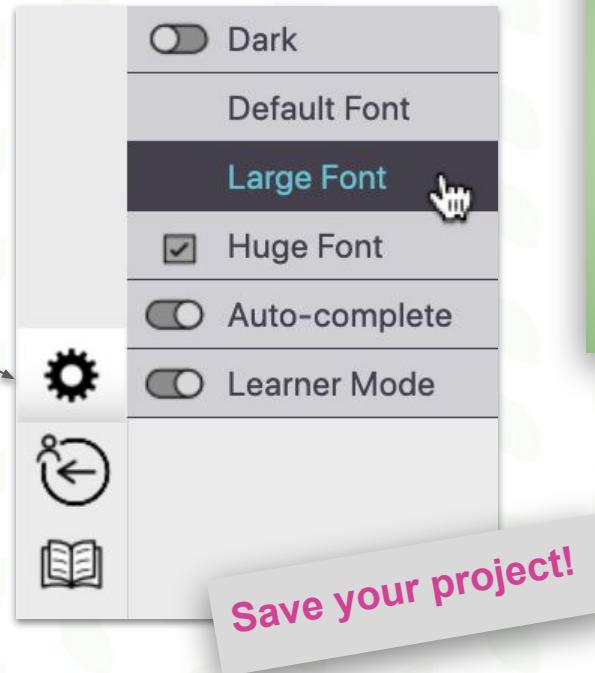
Customize your LYNX User Interface

1. On the bottom left side of the User Interface, click on the Gear Icon to change your Settings. You can choose a Dark or Light background for the Editor.



Auto-complete and Learner Mode should be in the ON position with the white circle on the right side.

Both are useful for students learning LYNX for the 1st time.



2. You can choose the size of the font that writes LYNX commands. Choose Default or Large or Huge.



Getting Started

Add a Background to Page 3



GO To PAGE 3

You will code your Terry Fox project on Page 3

1. The Template consists of 3 pages: Front Cover (Page 1)...



Create an animation of Terry Fox on his Marathon of Hope run



2. ...Page 2 showing you an example of what you can create. This is not an interactive page.



3. ...and Page 3 which is blank and ready for your creativity!

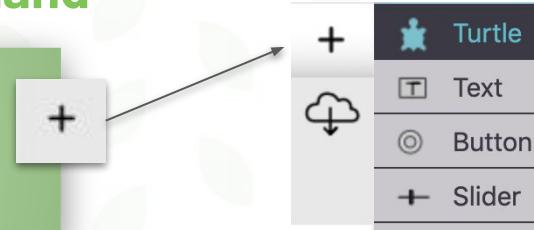
4. Navigate to Page 3 of the Template by clicking on the buttons in the bottom corners.



ADD A BACKGROUND to Page 3

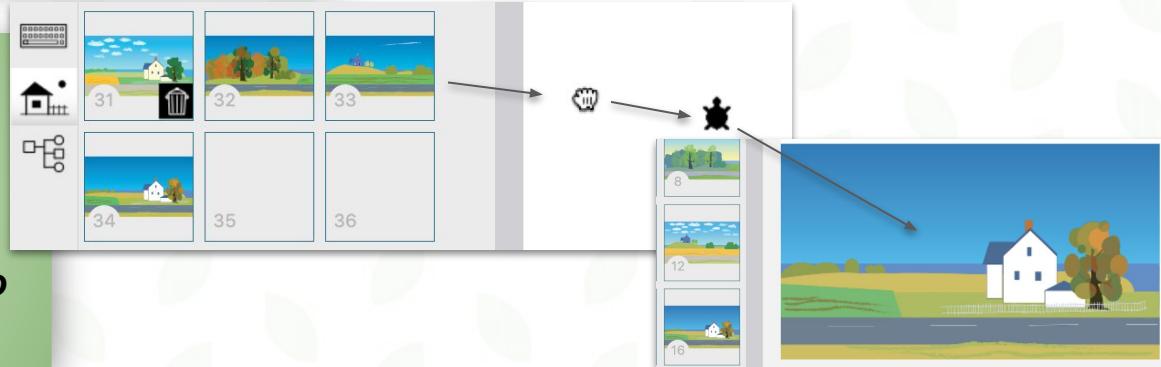
Use your mouse and the stamp command

1. There should be a **Turtle** on the page.
If there is no Turtle, click the **+** sign on the left side and choose **Turtle**.



Soon you'll learn another way of putting a shape on a turtle.

2. On the LEFT side, click on the **House** icon to open the **Clipart Pane**. In cells 19-34, choose a background you like. Click it. Your mouse pointer will turn into a white glove.



3. Now, click directly on the turtle. Click & Click. NOT click and drag!

4. In the **Command Centre** type:
stamp and press Enter



ADD A BACKGROUND to Page 3-Part 2

... OR use the **setshape** command

4. Right now you have a Stamped not-moveable background AND a moveable turtle with the same image. Want proof? Click in the **Work Area**, hold your mouse down and drag the mouse anywhere. You'll see 2 background images!

5. Let's set the turtle back to the original turtle shape so you can see it. In the **Command Centre** type:

Setshape 0 and press Enter

0 is always the original turtle shape.

6. Now try to move the background. Impossible!

7. Here is a **SECOND** way to put clipart on a Turtle.

You could have used the **setshape** Command instead of Click & Click. For example, in the **Command Centre** you could have typed **Setshape 30** and press Enter

Instead of 30 choose any number from 19 to 34

HINT. You can delete this turtle as you don't need it anymore. Right-click on it (Alt-click on Chromebooks). Click the **Trash bin**.

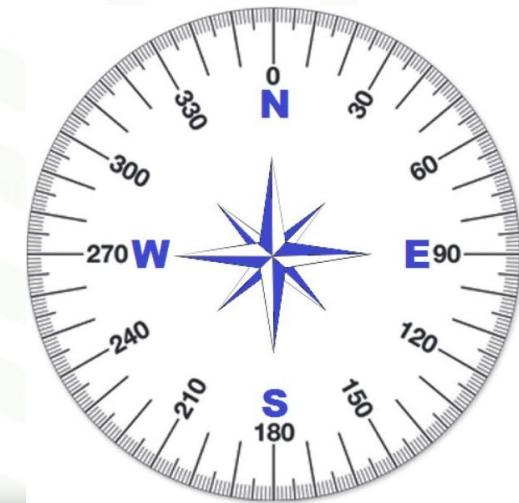
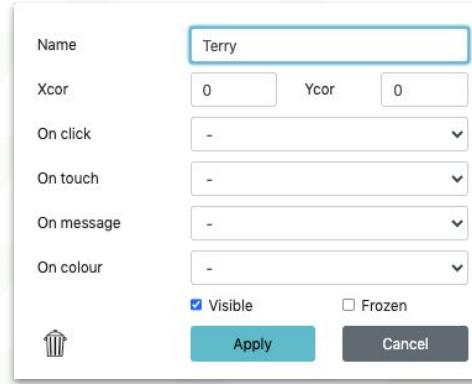
ADD A TURTLE!

And name it **Terry**

1. Make sure you are on **Page 3**.
If there's no turtle on the page, click the
+ sign and choose **Turtle** as explained
in Point 1 of a previous Card.

2. Right-click the turtle (Alt Click on
Chromebooks) and **name it Terry**.
Click **Apply**.

3. Your turtle named **Terry** still looks like
a turtle, but that's OK. We need to see
where it is heading to make sure it will
move in the correct direction.



4. Type in the Command Centre:
Terry, setheading 90 press Enter
Don't forget the COMMA after **Terry**
FYI: all turtles start with a default
heading of 0 (facing up, or North). If
we want **Terry** to move from left to
right, we should set its heading 90
degrees or East.

Note: The heading of the turtle can only be seen when it's in the original turtle shape.

Let's get Terry moving

Get the turtle to make a step forward

1. In the **Command Centre** type:

Terry, forward 3 and press Enter

Don't forget the COMMA after **Terry**

2. Did you see the turtle move forward? The turtle made a little step forward. If you did not see it, run this command again and watch closely!

3. Now, let's get our turtle to make a few steps in a row. In the Command Centre, type:

Terry, forward 3 forward 3 and press Enter
and see what happens.

Terry moved further but you couldn't really see the steps? Let's fix that!

FORWARD is a LYNX Command that moves the turtle forward the number of 'steps' or pixels you indicated as an input. In our case it's 3. Inputs are red. **FD** is the short version of **FORWARD**. We will use **FD** soon!

HINT: You don't have to retype a Command in the Command Centre. Just click the line you want to execute again and press Enter.

Save your project!



Let's get Terry moving

Click on the Turtle and drag it to the bottom of the page

1. Edit your instruction in the **Command Centre** like this:

Terry, fd 3 wait 1 fd 3 wait 1 fd 3 wait 1 .

Does the movement look better after you pressed Enter?

Why start the instruction with **Terry**?

Terry is the name of the turtle.

By addressing the turtle **with a comma**, you know which turtle will listen to the commands you type! You can have many turtles in projects.



WAIT is a Command that tells LYNX to pause a bit. FYI **WAIT 10** is 1 second.

3. Play with the numbers for **forward** and **wait** until you are happy with how your turtle is moving.

Can you figure it out what changes when each number changes?

2. If your turtle moves left to right, you can now set its shape to one of the Terry Fox shapes by using the **setshape** command. In the Command Centre type

setshape 1 and press Enter

You could also choose SetShape 2 or 3.

Save your project!



Let's get Terry running

Terry makes first steps

Now that Terry Fox moves, let's improve the movement. Type this in the Command Centre:

*Terry, setshape 1 fd 3 wait 1 setshape 2 fd 3 wait 1
setshape 3 fd 3 wait 1* and press Enter.

Does the movement now look like Terry Fox running when you pressed Enter?



NOTE: If you want ALL the commands executed as 1 instruction these commands *must be typed on the same line* in the Command Centre. Then you can press Enter

SETSHAPE, or its short form ***SETH***, sets the shape of the turtle to a specific Clipart from the Clipart Pane

You can run this instruction again and again by just clicking this same line in the Command Centre and pressing Enter.

If Terry Fox still moves in the wrong direction, remember to set its heading by executing ***seth 90*** from the Command Centre. ***Seth*** is the short form of ***setheading***.



Let's keep Terry running

Keep going Terry, you're the best!

Your turtle "knows" how to make 1 animated step. Let's make it repeat it – a few times or forever. Your choice. Edit your instruction, from the previous slide, in the **Command Centre** like this:

Terry, **repeat 80 [setshape 1 fd 3 wait 1 setshape 2 fd 3 wait 1 setshape 3 fd 3 wait 1]**

OR type this line instead, but not both. You choose!

Terry, **forever [setshape 1 fd 3 wait 1 setshape 2 fd 3 wait 1 setshape 3 fd 3 wait 1]**

Can you tell the difference between the **REPEAT** and **FOREVER** commands from their names? Read their **Tooltips** and see if you are right!

HINT: hover your mouse over a Command typed in the **Command Centre**. A **Tooltip** appears. It explains what the Command does and how to use it.



IMPORTANT:
To stop the **Forever** action, click the **STOP ALL** button to the left of the **Command Centre**.



PROCEDURES add new Commands to LYNX!



What are Procedures and what are the Rules to make one

1. Instructions written in the **Command Centre** are easy to execute but they are NOT saved with your project. Your solution is to **Create a Procedure**.

If you create a Procedure you can SAVE your Terry Fox animation.

2. A **Procedure** is a group of instructions that you give a Name to. This new procedure is ADDED to LYNX's commands like **Forward** and **Wait**.

Basically, you are teaching LYNX a **new command** for **THIS** specific project.

3. Rules for making a Procedure. All procedures MUST:

- start with **to**, then a space, then 1 word (no spaces in this word). This is called the **Title Line**.
- On a New Line, copy your code over from the Command Centre. You can have many lines of code.
- Finally, on the last line all procedures finish with the word **end**. No other words allowed on this line.

PROCEDURES add new Commands to LYNX!

Create a procedure to save what you did with the project

1. On the Left side, look for the **Procedures Pane** Icon (Hands-on a keyboard)



2. Let's create a **Procedure** called **animate**.

On Line 1, type: **to animate**.

On Line 2, Copy and Paste from the Command Centre:

**Terry, repeat 80 [setshape 1 fd 3 wait 1 setshape 2 fd 3
wait 1 setshape 3 fd 3 wait 1].**

3. Then on a **NEW Line**, type **end**

4. Test your new **Procedure**.

In the Command Centre, type: **animate**

Does Terry Fox run left to right? If not, make sure you followed the Rules for making a **Procedure**.

```
1 - to animate
2 Terry, repeat 80 [setshape 1
    fd 3 wait 1 setshape 2 fd
    3 wait 1 setshape 3 fd 3
    wait 1 ]
3 end
```

You can also use **forever** instead of **repeat 80**



ADD a BUTTON to Your PAGE...

...So friends can launch the Animate Procedure from Player Mode

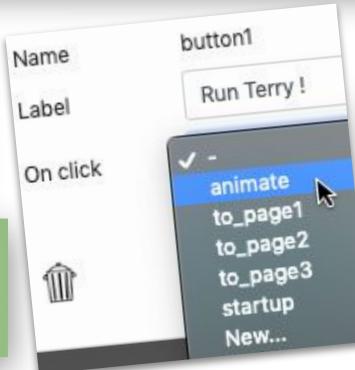
1. Click the + and choose **Button**. A button named ‘nothing’ appears on the Page

2. Right-click the Button on the Page.

3. In the **Label** field, type something meaningful like **Run Terry!** You can use a few words in this field as it is plain English. Spaces are OK

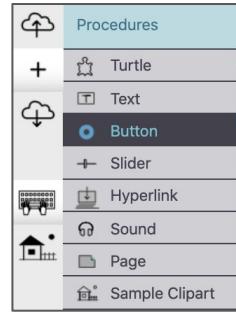
4. Click the **On click** drop down menu. All the procedures that were created for this Template are visible.

5. Choose **animate** (or the Procedure name you wrote).



6. Click **Apply**.

Save your project!



More abouts BUTTONS

1. Click the **button** to check if it works!

2. If you want your **button** bigger drag the bottom right corner of the button.

3 Click on the button and drag it somewhere on the screen.

4. A **button** is just a **Visible Object** that runs **Procedures** when clicked.

5. You CANNOT put Commands like **Forward**, **Wait** etc. in a Button

Run Terry!

Save your project!

He ran across Canada so add our flag!

1. Add a new Turtle by clicking the + sign and choosing **Turtle**.



2. Right-click on the **Turtle**. and name it **Flag**

3. Let's make it look like a flag.
Open the **Clipart Pane**.



Name

Flag

4. Move your mouse over the **Flag** shape to see its number.

5. Type in the Command Centre:

Flag, setshape 10 and press Enter. Don't forget the COMMA
Or use the **Click & Click** method you learned when creating a
Background on a previous Slide

Use the number you chose, either 9 or 10

Choose the Size of the Flag

And Stamp it on the background

6. Drag the **Flag** wherever you want it on your Page.

Is the **Flag** too small? Type in the Command Centre:

flag, setsize 60 and press Enter

7. Adjust the number for **setsize**. You're the boss!

Note: all turtles start with a default size of 40.

8. Once the **Flag** is the size you like, you can stamp it.

Type in the Command Centre:

Flag, stamp and press Enter

And get the turtle shape back by typing this:

Flag, Setshape 0 and press Enter

Finally, remove the turtle by right-clicking it and clicking the Trash bin.

Save your project!

USE a TEXT BOX and write about Terry Fox

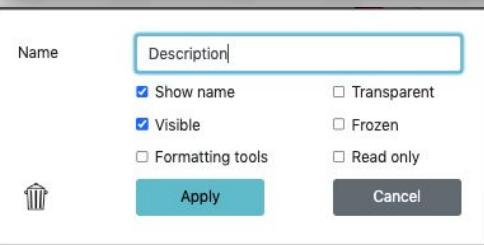
Creating, Moving, Resizing and Formatting Text

1. Click the + sign and select **Text**.

A new text box with the name **text1** appears on your screen.

2. Right-click on it. A dialog box appears.

For the name type **Description**. It must be a 1 word name



3. Click **Apply**. Now start writing about Terry Fox



Move the text box: Grab it by the name and drag it.

Resize it: Drag on the small triangle in lower right that appears when you hover over it.

Format: Click inside the text box — or select text — and use the formatting commands that appear.



Share your Project

Send it to friends or publish it!

1. Click the Share icon.



2. Click Create.

3. A URL will be generated here.

4. Click on Copy Link and send it to friends.

5. Add a Preview Image to give your project a Visual identifier

6. Will you allow others to modify your App? Your original will remain!

Share this project...

Sharing Options

Project Properties

Link Sharing is OFF. [Create a link to share.](#)

URL [To create a link to share, click Create](#)

[Copy link](#) [E-mail](#) [Twitter](#) [Facebook](#)

Embed on your site [To see the code, click Create](#)

[Copy](#)



More Ideas and Challenges

Add Clipart and Sounds to Your Project



Text to Speech!

Make LYNX read your written words out loud

1. Type **say description** in the Command Centre and press **Enter**. The **say** command reads the contents of the Text Box named **description**. Make sure that **description** is the name of your Text Box.

say description

The SAY command uses the computer system voices so it may sound differently on different computers.
Make sure your volume is ON!

2. You can write a procedure with just 1 line of code in it:

say description

Remember to add a second **Button** and assign **READ** as the Procedure when it is clicked.

27 - to read
28 say description
29 end
30

Save your project!



ADDING CLIPART

How to add Clipart to Your Project

1. Copy the clipart (photo).

Press **Ctrl-C** on WIN and Chromebooks and **Command-C** on a Mac,

2. Click on the House icon to open the Clipart Pane.



3. Click on an EMPTY box to reveal a + sign.

4. Paste your image into the box. Press **Ctrl-V** on WIN and Chromebooks & **Command-V** on a Mac.

TWO WAYS



You can import your own photos and images in PNG and JPG formats!

1. Click on the House icon to open the Clipart Pane.



2. Click inside an empty box and then click the + sign.

3. Click the Select button to find a clipart file already saved on your computer.

4. Click the Create button.



ADD Your OWN Voice

Record something and have LYNX play it

1. Record your voice using a recording audio app.

Name your .wav or m4a file with a simple 1-word name before importing. Ours is called *My_voice*.

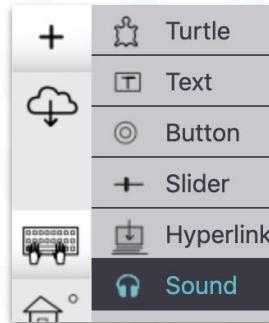
2. Click the + and choose Sound.

3. Select the .wav or m4a file from your computer.

Click *Create*.

4. Move the sound icon anywhere.

5. To try it out, in the Command Centre, type: *My_voice*. FYI: The UnderScore symbol _ acts like a bridge between *My* and *voice*.. LYNX considers this a 1 word name!



Save your project!

6. Create a procedure with just 1 line in it:

to speak

My_voice

end

Now add a *button* and assign *speak* to it.

Want to hide your sound icon? Right-click on the *My_voice* sound icon and uncheck *Visible*.

Want to see it again?

In the Project Tree, select Page3 and click the Arrow to see all the Objects on this Page. Select *My_voice* and press *Edit*. In the dialog that opens, check *Visible*.



Add COMMENTS to your PROCEDURE.

It explains your code to others and professional coders do it

1. Compare this and this:

```
1-to animate
2 Terry,
3-repeat 80 [
4   setshape 1 fd 3 wait 1
5   setshape 2 fd 3 wait 1
6   setshape 3 fd 3 wait 1
7 ]
8 end
```

```
1-to animate
2 Terry,
3-repeat 80 [
4   setshape 1 fd 3 wait 1
5   setshape 2 fd 3 wait 1
6   setshape 3 fd 3 wait 1
7 ]
8 end
```

2. Which one is easier to read?

In a **Procedure**, you do NOT have to write all the **Commands** to be executed in one line. Format your **Procedure** so it helps you better understand what it does!

3. It's YOUR choice how to arrange commands in a **Procedure**. LYNX will help you keep your code tidy by adding indents and numbering lines.

4. It is a good idea to add **Comments** to your **Procedure**. Start a **Comment** with a semicolon. **Comments** are in plain English and grey, they are not executed as **Commands** even when they are inside a **Procedure**.

```
1-to animate
2 Terry,
3-repeat 80 [
4   setshape 1
5   fd 3
6   wait 1
7   setshape 2
8   fd 3
9   wait 1
10  setshape 3
11  fd 3
12  wait 1
13 ]
14 end
```

Procedures

```
1-to animate
2 Terry, ;this addresses a particular turtle in the Project
3-repeat 80 [
4   setshape 1 ;this sets turtle shape to 1
5   fd 3 ;this moves turtle 3 steps forward
6   wait 1 ;this adds a small pause
7   setshape 2 fd 3 wait 1
8   setshape 3 fd 3 wait 1
9 ]
10 end
```

Save your project!



CODEtoLEARN

Credits

Principal Writers *Michael Quinn
Elena Yakovleva*
Contributors *Lisa Anne Floyd*
Reviewers *Misha, Max & Charles*



Terry Fox Tribute Cards by [Code To Learn](#) is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#).

Partners



Deloitte.

A program of



Connected North

With funding from

Canada