

Blueprint for *EDDL 5101 Assignment 4: Activity Design*

Activity Description

Students are going to access a learning activity in an online environment and learn what thermal energy is, and what some sources of thermal energy are. This includes natural, electrical, and chemical sources of thermal energy.

Scope

New learning activity: Brand new content on thermal energy

Pre-requisites

None

Target Audience

Grades 3-4: Mr. Ford's Class

Learning Outcomes

Content:

[sources](#) of [thermal energy](#)

thermal energy can be produced by chemical reactions (e.g., hand warmers), friction between moving objects, the sun, etc.

the energy that comes from the movement of particles within matter

Skill outcomes:

Demonstrate an understanding and appreciation of evidence

Activity Materials

- **Laptop or Computer**
- **Internet connection (Stable)**
- **Access to internet browser (Any browser, but Firefox works best with Class Dojo)**
- **Working speakers**

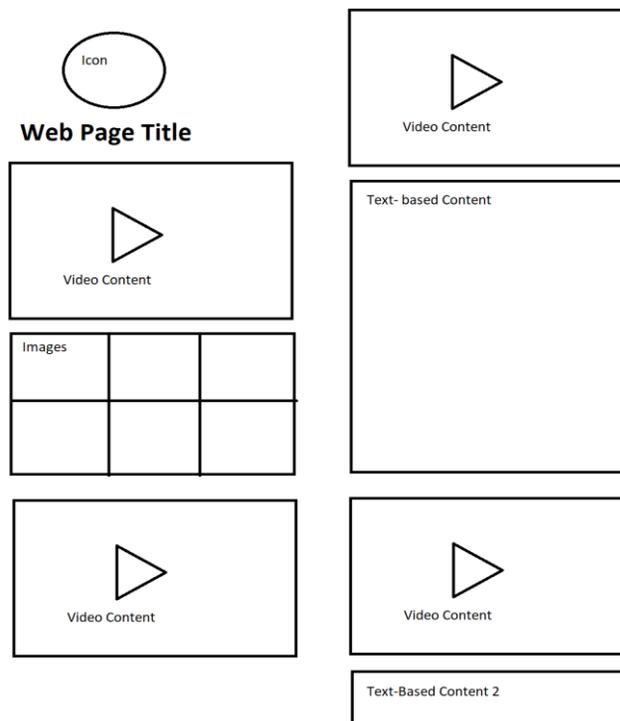
Assessments

Assessments	Weight (%)	Learning Outcomes being covered
Formative Assessment (checking for learning and understanding) Activity on Class Dojo	0	sources of thermal energy thermal energy can be produced by chemical reactions (e.g., hand warmers), friction between moving objects, the sun, etc. the energy that comes from the movement of particles within matter

Activity Blueprint

Page / Section	Topic	Objective(s)	Assessments	Page Script / Activities	Resources
Lesson 1	Thermal Energy: What is it (define it), and what are some sources (natural, electrical, chemical reactions)	By the end of this lesson, students will be able to define what thermal energy is (in a simple way), and provide several examples of sources that provide thermal energy	Formative: Students will complete an activity on the Clasdojo learning management system, via the worksheet / quiz development tool which will be developed by the teacher. The worksheet will be primarily for formative assessment purposes only, to check for understanding and to develop digital literacy skills.	Detailed Explanation of Activity Below	Videos (embedded onto teacher's web page) Text-based content – linked to teacher's webpage Pictures – posted to teacher's webpage Learning Management system: Edmodo <i>All resources are properly cited and referenced at the bottom</i>

Wireframe of Learning Content Webpage:



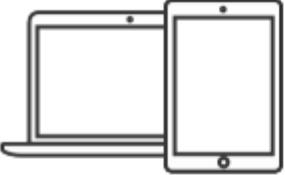
A step-by-step outline of what your web page/website will look like, and how the instructional activity will flow:

Part One: Accessing the activity through Classdojo

Instructions to get to Class Dojo (students will have access to this document before beginning the activity)

Once you have access to your laptop or computer (tablet or mobile phone works too), click onto an internet browser such as firefox:

1



Download the ClassDojo app, or go to www.classdojo.com from a computer.

2



Enter as a student.

3

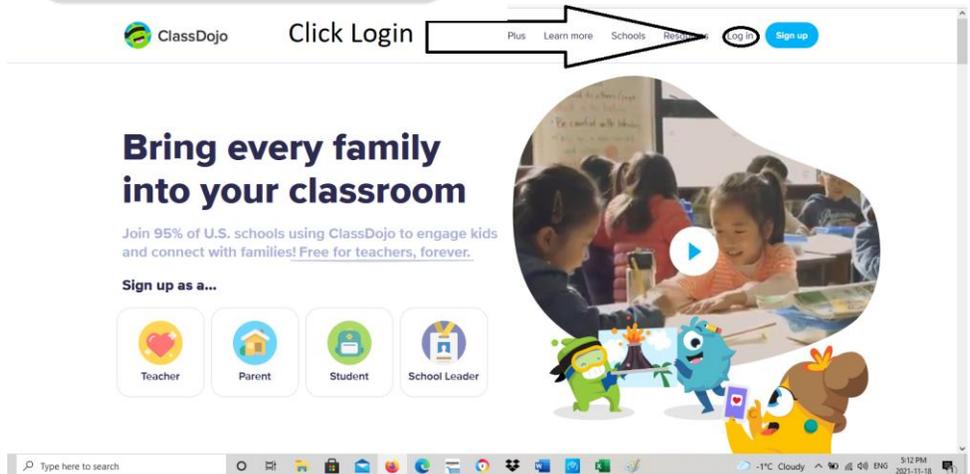


Scan the QR code above.

Type: www.classdojo.com in the address bar and click enter on the keyboard

Once you have arrived to Classdojo, your page should look like this:

From here, you need to click on “login”.

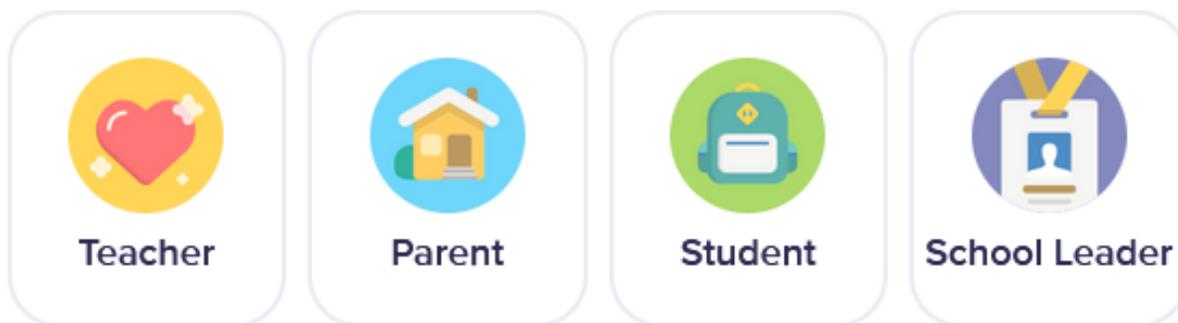




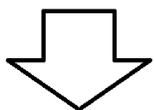
Next, your page will look like this:

Log in to ClassDojo

You will need to click on "Student"



From here, you will need to click on "Scan QR Code" (You will need to print the QR code page to get access to the activity, this will be attached along with this document for assignment 4 and for the final assignment)



Choose how to enter your class



Scan QR Code

For devices with a camera at home or in class



Enter your class text code

For devices in a classroom

Have a username?

[Log in here](#)



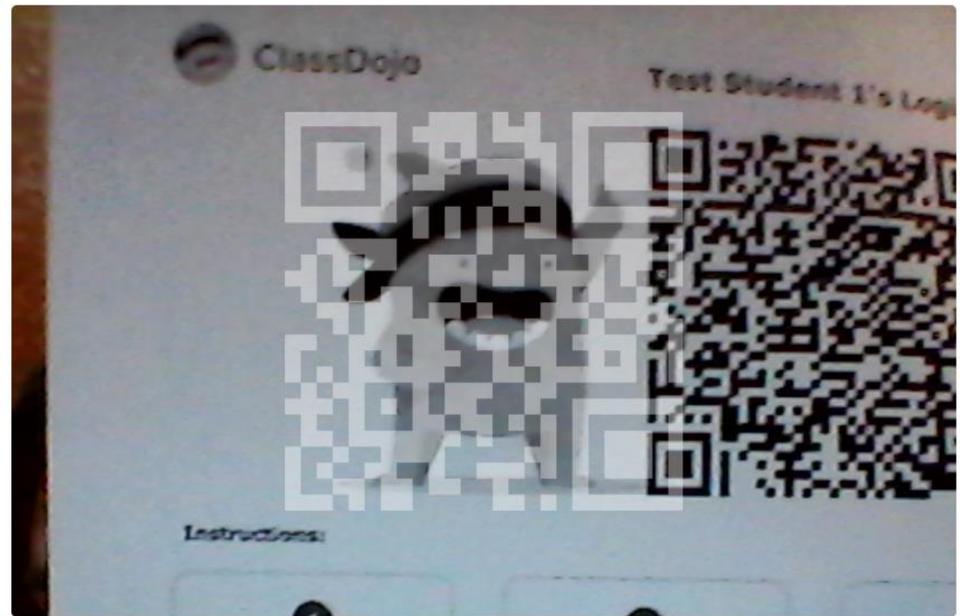
Sign in with Google

Use a school provided google login

You will need to line up your QR code printout with the webcam:

Once it is lined up, it will log you in immediately.

*For this assignment, I have created thirteen “test student” accounts
That everyone in EDDL 5101 can use to access the learning
Activity. The login QR codes will be attached with the final assignment.*



Part Two: Accessing the activity:

Once you are logged into Classdojo, your front page should look like this:

To start the activity, you can click on “Start”, or you can read the instructions right on Your front page and go to the link in the activity description.

UDL: There will also be the option of getting the instructions via video
For students who struggle with reading. This is accessible by clicking on the
Start button.

Part Three: Learning Activity on Thermal Energy

Once you click “Start” on the LMS homepage, you will access the activity. The instructions will be on the right side of the screen and will say:

Sample Activity - testing features

You are going to learn all about Thermal Energy! Your goal: Learn what thermal energy is, and what some of its sources are.

How?

Go to:

<https://learningwithmrford.tumblr.com/>

View ALL the content on the page,

Then:

Complete the worksheet on this learning activity!

Sat, Nov 20 · Demo Class

Please Note: The activity title is going to change, and the instructions will also have a video component once everything is finalized.

Students will click on the link to access the learning content for this activity. The learning content will have videos, text, photos, and a “read aloud” of the text for a UDL component. Once students are done accessing the learning content, they can start the learning activity within ClassDojo. When students click on the link it will open in separate tab.

Learning Content Page: (Please note that the design could change before this activity is finalized)



Learning Content Includes:

Two videos on Thermal Energy

Text-based learning content

A read aloud of the text-based content
(UDL support)

Images

****All learning content is described
and referenced at the bottom
of this document**

***** The layout of this page may change
before the learning activity is finalized**

This page is built using Tumblr. Tumblr is a web blogging platform like WordPress. I chose this platform because I have used it before, and I am more familiar with it. I am attaching the link here so you can view it: (please note I could change the theme and layout between now and when the final assignment begins).

<https://learningwithmrford.tumblr.com/>

When students click on the link on Classdojo, this webpage will open in a different tab. Once students have observed the content, they can click on their Classdojo tab and begin the assessment (Worksheet):

Worksheet Page in Classdojo: (Please note this is a sample, the finalized activity page will be done soon – this is to give you a visual layout of the activity flow)

The screenshot shows a web browser window with the ClassDojo interface. The page title is "Sample Activity - testing features". The main content area is titled "Thermal Energy" and is for a student named "Test student1".

Name: Test student1
Thermal Energy

After viewing **ALL the content** on our webpage, please answer the questions below.

Webpage link:
[Learning with Mr. Ford \(tumblr.com\)](https://learningwithmrford.tumblr.com/)

Part One: What is Thermal Energy?
Choose the best word to complete the sentence: (Type it in, or circle)

- When molecules in an object are _____ (cold/hot) they move _____ (quickly, slowly)
- When an object is cold, it's molecules move _____ (Slowly, quickly)

The word "cold" in the first question is circled in black. The word "hot" is also circled in black.

On the right side of the page, there is a scrollable area with the following text:
You are going to learn all about Thermal Energy!
Your goal: Learn what thermal energy is, and what some of its sources are.
How?
Go to:
<https://learningwithmrford.tumblr.com/>
View ALL the content on the page,
Then:

At the bottom of the page, there is a search bar and navigation buttons (+, -).



This activity page will allow students to respond in various ways:

- Through text
- Drawing
- Circling words
- Leaving an audio message

The worksheet response features are:

Once students finish answering all questions, they will hit the “hand in” button at the top right corner:

Sample Activity - testing features

Name: Test student1

Thermal Energy

After viewing **ALL the content** on our webpage, please answer the questions below.

Webpage link:
[Learning with Mr. Ford \(tumblr.com\)](https://learningwithmrford.tumblr.com/)

Part One: What is Thermal Energy?
Choose the best word to complete the sentence: (Type in, or circle)

1. When molecules in an object are _____ (cold, hot) they move _____ (quickly, slowly)
2. When an object is cold, it's molecules move _____ (Slowly, quickly)

You are going to learn all about Thermal Energy!
Your goal: Learn what thermal energy is, and what some of its sources are.

How?

Go to:
<https://learningwithmrford.tumblr.com/>

View **ALL** the content on the page,

Then:

Once students have submitted their assignment, I will receive a notification on my Clasdojo login where I can view their submission and provide feedback. I can also give students the opportunity to go back and work on it if they have misunderstood a task.

Clear instructions for the student to complete the activity:

Student instructions will include:

1. Login information for ClassDojo
2. Learning Activity instructions

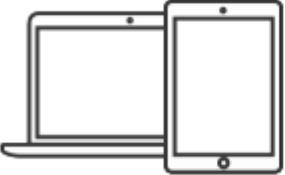
The login information will be the same as I mentioned in the step-by-step outline above:

Please note that these are login instructions for when students are not in class (at home, for example). This is so that everyone in EDDL 5101 can access the activity. In a classroom environment I can generate a temporary login code for all students to use, but as it is temporary it would not work for this assignment's context (you would have to contact me each time you want into the LMS classroom to view the activity).

Part One: Instructions to get to Class Dojo (students will have access to this document before beginning the activity)

Once you have access to your laptop or computer (tablet or mobile phone works too), click onto an internet browser such as firefox:

1



Download the ClassDojo app, or go to www.classdojo.com from a computer.

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Enter as a student.

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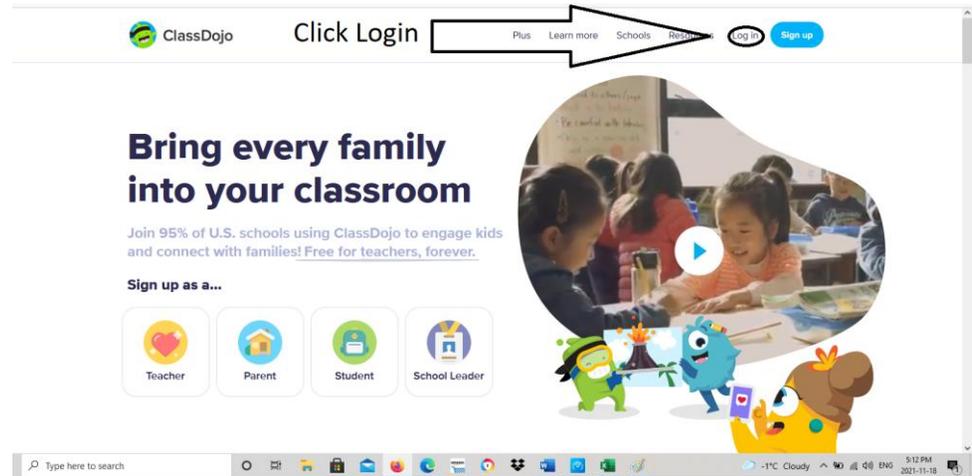


Scan the QR code above.

Type: www.classdojo.com in the address bar and click enter on the keyboard

Once you have arrived to Classdojo, your page should look like this:

From here, you need to click on “login”.



Next, your page will look like this:



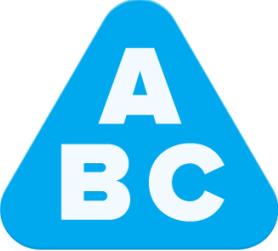
You will need to click on “Student”

Log in to ClassDojo



From here, you will need to click on "Scan QR Code" (You will need to print the QR code page to get access to the activity, this will be attached along with this document for assignment 4 and for the final assignment)

Choose how to enter your class



Scan QR Code
For devices with a camera at home or in class

Enter your class text code
For devices in a classroom

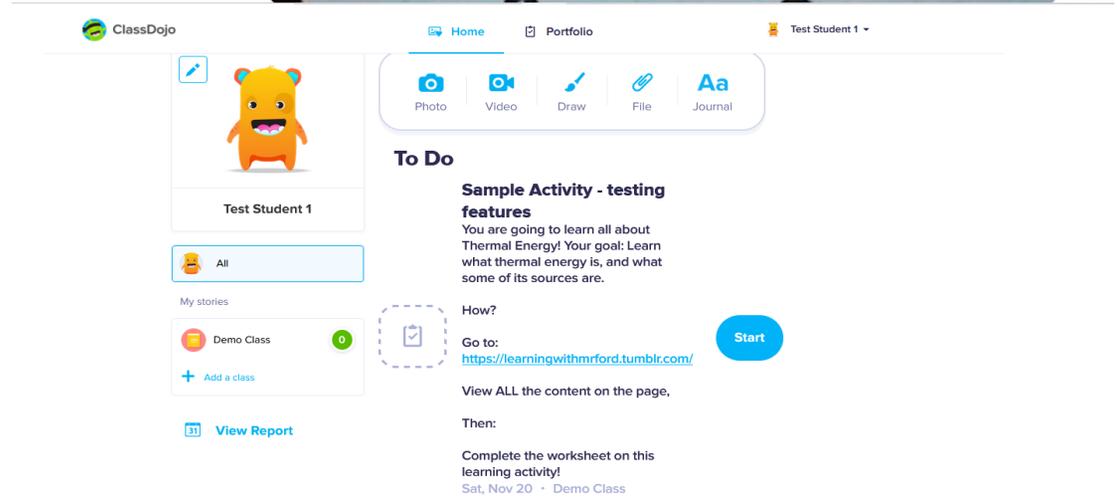
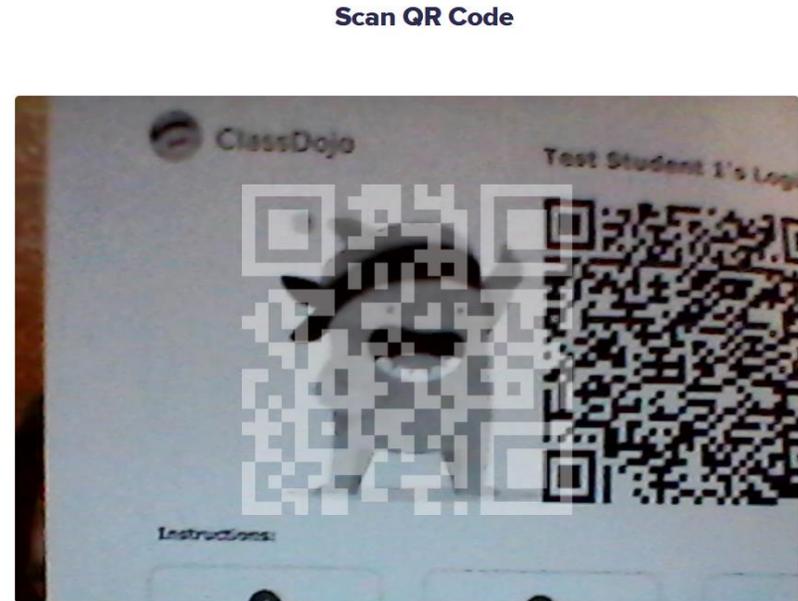
Sign in with Google
Use a school provided google login

Have a username?
[Log in here](#)

You will need to line up your QR code printout with the webcam:

Once it is lined up, it will log you in immediately.

Great! Now you are logged in to Clasdojo!



Part Two: Learning Activity Instructions

(These instructions will be embedded into the activity, with a video explaining them as well that will be available to view in the assignment, as well as on the learning Content webpage)

Thermal Energy: What is it? What are some sources of Thermal Energy?

You are going to learn all about Thermal Energy!

Your goal: Learn what thermal energy is, and what some of its sources are.

How?

Go to:

<https://learningwithmrford.tumblr.com/> (click on this link and it will open in a new tab)

View ALL the content on the page: click on the videos for them to play, click on the pictures to view them, click on the text to make it larger

After you have viewed all the content, click on “start” on your Classdojo page to begin the activity worksheet:

Complete the worksheet on this learning activity by: Filling in the blanks, circling the correct answer, matching up items, and drawing a diagram.
Use the worksheet tools to complete the activity:

- Text (click the “T” and click on the worksheet. A blue box will appear to type
- Pencil: you can use this to draw, circle, or match terms
- Eraser: use this to fix mistakes
- Sticker: you can use this to input emojis, letters, and numbers from a list of options
- Dropper: use this to change the color of your text, shapes, or drawings
- Arrows: use these to navigate to different pages of worksheet

You can always check back to the webpage if you need more information!



Click the “hand in” button when you are finished! (Top right corner)



Hand in

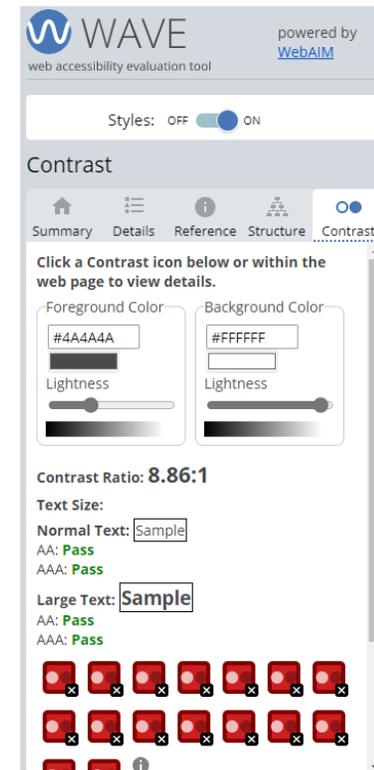
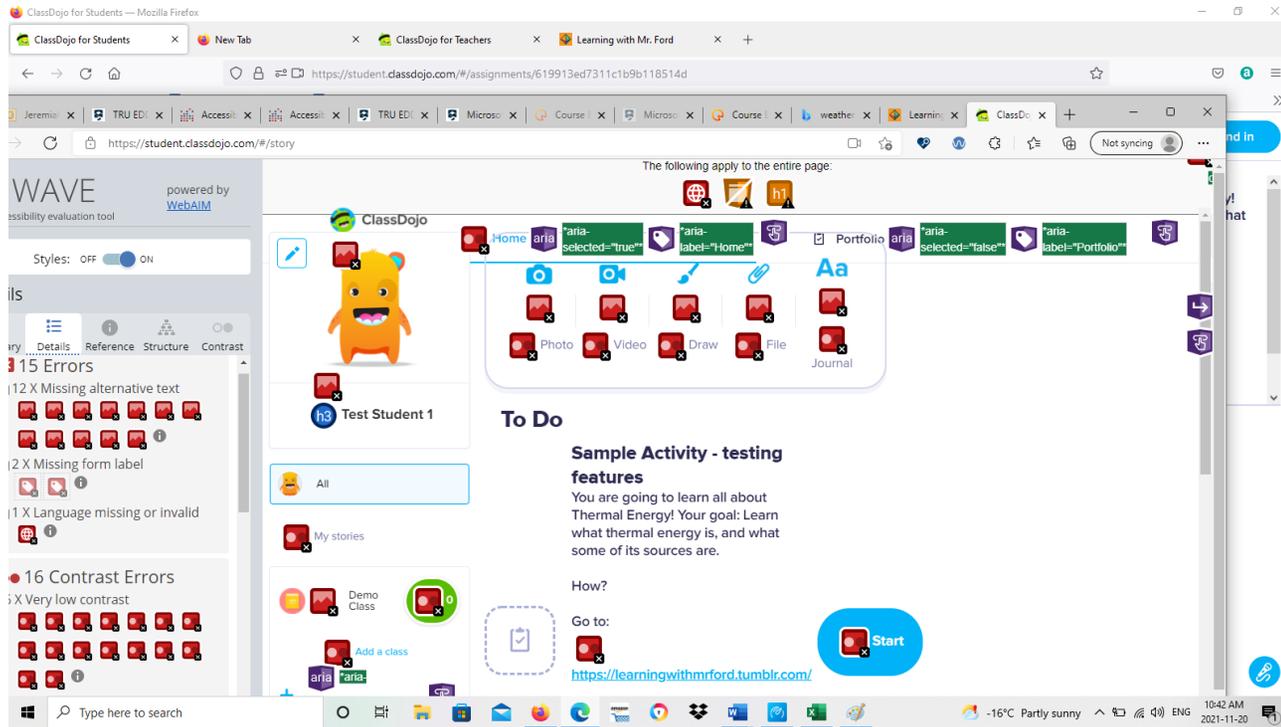
Questions? Comment on our “Stories” page and I will provide help!

An explanation of how your lesson will apply Universal Design for Learning (UDL) principles, methods and strategies including strategies for improved accessibility:

The strategies used to improve accessibility for this learning activity include:

- **Providing content in various mediums (video, text, and images)**
- **Detailed instructions in text and video format**
- **A learning management system that is suitable for elementary students (Classdojo is very user-friendly and easy to use)**
- **An assessment page that requires limited writing (answers will include circling the correct answers, matching, drawing, and filling in the blanks to provide greater accessibility for students with emerging literacy levels)**

Using the WAVE tool (Web Accessibility Evaluation Tool) on the Class Dojo website:



Classdojo's LMS has limitations that involve lacking alternative text for some of the images, along with minor contrast errors. Overall, the layout of the webpage is accessible and easy to read. The text sizes all "pass" for accessibility on the wave tool:



Provide multiple means of action and expression: Offer different methods for students to demonstrate what they are learning such as through writing, multimedia, or demonstration.

Students will be able to input text, draw, circle, and draw lines to match terms on the follow-up activity after viewing the learning content.



Provide multiple means of representation: Consider the ways in which the items are presented (e.g., text, graphs, charts, images, videos, demonstrations, objects to manipulate) and if they create barriers for students.

Instructions will be offered in text and video format, the learning content will have text, video, and images.

Source:

[UDL On Campus: UDL and Assessment \(cast.org\)](https://www.cast.org/)

Full Activity Resources and References List:

APA references for ALL resources and references

Curriculum Outcomes

Science 3. Building student success - B.C. curriculum. (n.d.). Retrieved November 12, 2021, from <https://curriculum.gov.bc.ca/curriculum/science/3/core>.

Learning Management System:

ClassDojo. (n.d.). *Classdojo*. ClassDojo. Retrieved November 20, 2021, from <http://www.classdojo.com/>.

Learning Content Webpage

Ford, J. (2021, November 13). *Learning with mr. Ford*. Learning with Mr. Ford. Retrieved November 20, 2021, from <https://learningwithmrford.tumblr.com/>.

Learning Content: Text

Heat. (2021). In *World Book Kids*.
<https://www.worldbookonline.com/kids/article?id=ar830878>

Hollingsworth, D.K. (2021). Heat. In *World Book Student*.
<https://www.worldbookonline.com/student/article?id=ar250080>

Thermal energy. Thermal Energy - Knowledge Bank - Solar Schools. (n.d.). Retrieved November 20, 2021, from <https://www.solarschools.net/knowledge-bank/energy/types/thermal#:~:text=Thermal%20energy%20%28also%20called%20heat%20energy%29%20is%20produced,47%20sec%20Heat%20Energy%20-%20Science%20for%20Kids>.

Learning Content: Videos

turtlediarydotcom. (2015). *Science for Kids: Heat Energy Video*. YouTube. Retrieved November 20, 2021, from <https://www.youtube.com/watch?v=xGKg3TSO4v8>.

YouTube. (2020). *Thermal Energy / Heat Energy Lesson for Kids*. YouTube. Retrieved November 20, 2021, from <https://www.youtube.com/watch?v=jfXpQmRvnIA>.

Images: On webpage and embedded into videos

Archer, D. (n.d.). *"DSC09013 - Coal Furnace"*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/22490717@N02/37049491022>.

Ben+Sam. (n.d.). *Thermometer*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/11080385@N05/3498468965>.

Cathrae, M. (n.d.). *"Home Toaster Toasting"*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/34067077@N00/8576211>.

fuzzysaurus. (n.d.). *"Dryer"*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/14955511@N03/5280819101>.

gnuckx. (2011). *"Etna Volcano Paroxysmal Eruption Jan 12 2011"*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/34409164@N06/5711827176>.

Heat from friction [Online photo]. (2021). In *World Book Student*.

<https://www.worldbookonline.com/student/media?id=pc300249>

jerhoyet. (n.d.). *Ambient Temperature*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/71355861@N00/2074981997>.

jmv. (n.d.). *Amazing microwave*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/61767360@N00/16366498>.

Karrer, M. (n.d.). *Sun 2011-12-08*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/55051537@N00/6487199145>.

Lucier, N. (n.d.). *"Beach Bonfire in Newfoundland"*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/36121888@N08/3653101587>.

L, G. (n.d.). *Thermally Agitated Molecule*. wikimedia. Retrieved November 20, 2021, from <https://commons.wikimedia.org/w/index.php?curid=1615355>.

Shakerman (Archive). (n.d.). *Boiling Water*. flickr. Retrieved November 13, 2021, from <https://www.flickr.com/photos/27482959@N08/2835194472>.

State Farm. (n.d.). *"Keeping warm with an oven or stove"*. Retrieved November 13, 2021, from <https://www.flickr.com/photos/40567541@N08/8459059830>.

waferboard. (n.d.). *Coffee Steam 2*. flickr. Retrieved November 19, 2021, from <https://www.flickr.com/photos/waferboard/7417277946>.

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<https://www.flickr.com/photos/waferboard/7417277946>

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