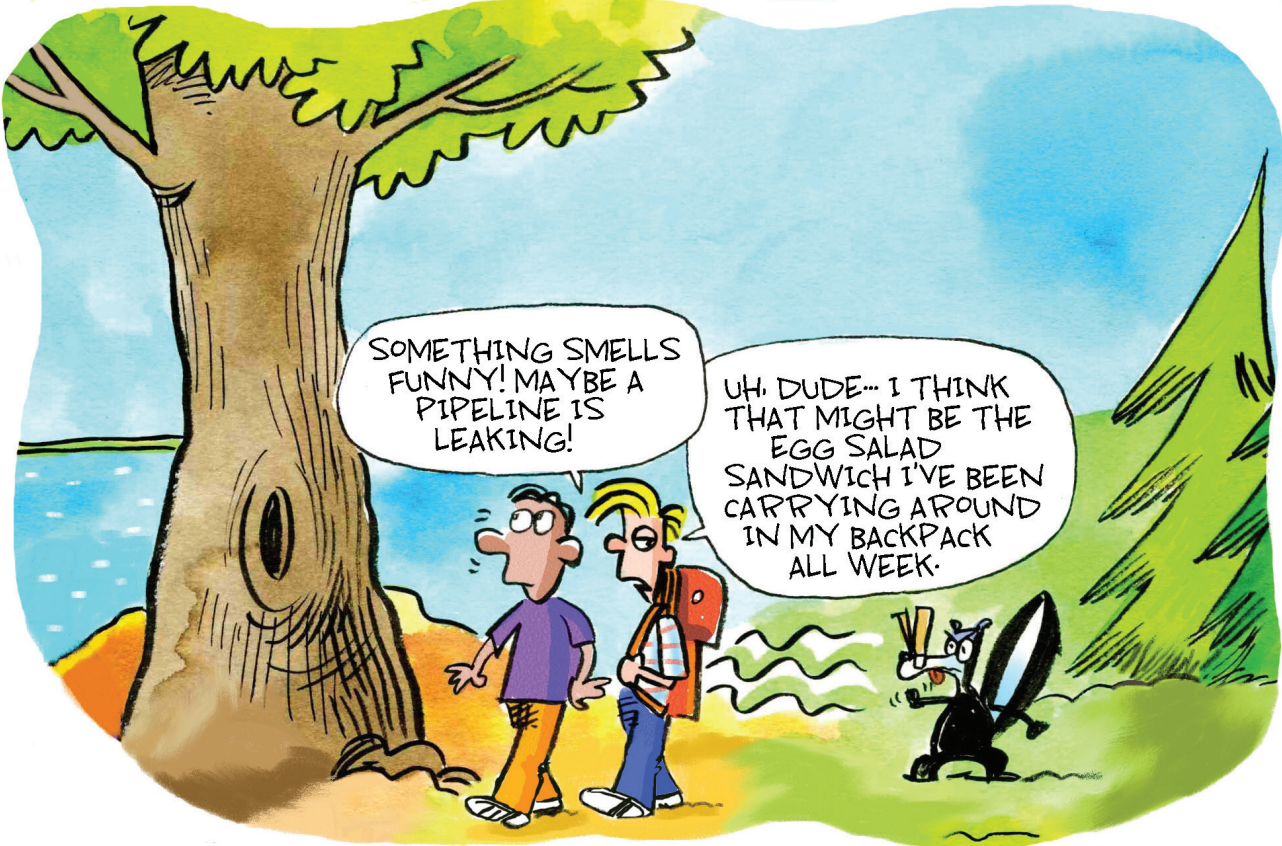


Youth Energy Safe



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Learning Objectives

Call or Click Before You Dig

- Recognize and identify the markings for underground utilities.
- Explain how and why to “Call or Click Before You Dig.”
- Understand the consequences of unsafe digging: interrupted services, fines and/or repairs costs, and injuries or death.
- “Call or Click Before You Dig.” The request and the locator services are free.

Pipeline Leak Recognition and Response

- Recognize the sights, smells and sounds of a pipeline leaking.
- Call ‘911’ if they notice any of these signs.

Suggested Instructors

The Youth Energy Safe Kit has been developed in a way that allows all community members to present it; however, individuals with knowledge of underground utilities, pipelines and excavation are ideal candidates as they will have a greater understanding of the topic. You may want to reach out to a representative from utility companies (natural gas, electricity, telephone, cable and internet), line locators, pipeline technicians, contractors or excavators.



Prezi Speaking Notes

(estimated time: 30 minutes)

These Speaking Notes correlate with the Prezi slide numbers.

The Prezi presentation can be found at www.youthenergysafe.com/resources.

1. Introduce the Youth Energy Safe program.
2. “Today we are going to discuss underground utility safety, pipeline leak recognition and response and how TC Energy keeps us safe!”
3. What are marker flags used for? ***Hold up marker flags (found inside the pipeline marker sign)****
 - Ask students if they have ever seen the flags before, where they have seen them if they know what they are used for.
 - Answer: Marker flags can be seen anywhere that a digging project is taking place. For example: yards, parks, playgrounds, fields, ditches and construction sites. They are used to identify where underground utilities are located and where not to dig.
4. If you are planning on building a fence or planting a tree, remember to call 811 or to visit **www.call811.com** to request a locate. A technician will come to your house and mark your underground utilities using flags and paint so that you know what is below before you start digging. This is a free service that will keep you and your family safe!
5. Each color of flag represents a different utility.
 - › **Red** – electricity
 - › **Yellow** – pipelines: natural gas, oil, steam, petroleum
 - › **Orange** – phone, TV, internet
 - › **Blue** – water
 - › **Green** – sewers and drains



6. Underground utilities: these are the different types of utilities that are underground: sewer and drain lines, water, electricity, fiber optics (phone, cable and internet) and pipelines (natural gas, oil, steam and petroleum). Many of these services are underneath the ground at your house so that you can be provided with things like: flushing toilets, running water, lights, cable and internet and gas to heat your homes. It's important to call or click before you dig, to avoid damaging these lines or getting hurt. **Remind the students to pay close attention to what each colour of flag means for later on (there are trivia questions based on this).**

- 7. Construction vs. household digging:** It is common to think that only large construction machinery such as a track hoe can harm underground utilities, but even digging with a hand shovel in your back yard requires a locate.
- 8.** Why do you need your underground utilities marked?
- Underground utilities can be very shallow under the surface, making them easy to damage with power or hand tools.
- 9.** Even if you're not digging you can still affect underground utilities. Driving over pipelines can also be unsafe so it's also important to call or click before you cross. Heavy equipment driving over the pipeline can cause a lot of damage from putting so much pressure on the pipeline. Especially, if there are rocks or other debris rubbing against the pipeline and removing the protective coating causing corrosion.
- 10.** Unsafe digging has serious consequences!!!
- **Interrupted services** – if you hit an underground utility while digging, the entire neighborhood could be affected. For example, no water, power, cable/internet or gas for an extended period of time.
 - **Fines and/or repair costs** – utility companies can fine the person responsible for damaging the utility. Utility companies can also charge you for repairing the lines.
 - **Injuries or death** – hitting an underground utility can result in severe injuries and even death! For example: what do you think would happen if you hit an electrical line while digging with a shovel in your backyard? Possible answers include:
 - › The power to your home could go out, or even the entire neighbourhood's power could go out for an extended period of time.
 - › You could be fined by the power company to repair the line, which costs a lot of money!
 - › You could get electrocuted, resulting in severe burns or even death.
 - Unsafe digging is an unnecessary risk. Take the time to call 811 or visit **www.call811.com** to have your underground utilities marked for free!



- 11. Safe Digging Lessons with Cliff Meidl** (*the video will play automatically after the second click of your mouse*): This video is about a two-time Olympic kayaker's experience with unsafe digging on the job when he was a teenager.

Warning: the video includes graphic images and should not be viewed by students under the age of 12.

12. Safe Digging with Digger the Dog:

This two minute animated video for all ages puts safe digging into the perspective of two dogs trying to bury their bones.

13. Dig with C.A.R.E:

- **Call or click before you dig** – the most important thing you can do is dig with C-A-R-E. The first step is to call or click before you dig. You can call 811 or visit **www.call811.com** to request the locating service online. The One-Call Centre will contact the utility companies to visit the digging site and mark the underground utilities. This is a free service that will protect you from interrupted services, fines/repair costs and injuries/death.
- **Allow required time for marking** – make sure that you wait for the technicians to come to your house to mark the utilities before you or your parents start digging.
- **Respect the marks** – don't move the flags or ignore them when digging.
- **Excavate carefully** – hand dig to determine the exact location of the utilities.

14. What can you do to stay safe?

- Call or click before you dig
- Know the signs of a pipeline leak

- 15.** Pipeline marker signs are there to warn you that a pipeline is underground. These are the different types of signs you might see. ****Pass around the pipeline marker sign****

- **Line Marker and Warning Sign** – This marker is the most common. It contains operator information (example TC Energy), type of product (example oil or natural gas) and an emergency contact number. They come in many different sizes, shapes and colors.
- **Vent Marker** – This marker indicates that a pipeline (protected by a steel outer casing) passes beneath a nearby roadway, rail line or other crossing.
- **Aerial Marker** – These skyward facing markers are used by patrol planes that monitor pipeline routes.

- 16.** Knowing the signs of a leaking pipeline is also important!

17. If a pipeline is leaking, you may be able to smell it, hear it, and/or see it.

• **What you may smell:**

- › It smells funny...something like rotten eggs.
- › Fuel
- › Skunk-like

• **What you may see:**

- › Dead or dying plants.
- › Dirt or water shooting up in the air.
- › Frost on the ground.
- › Fire coming from the ground.
- › Black liquid pooling on the ground or a rainbow sheen on the water (oil only).

• **What you may hear:**

- › It's really loud!
- › Roaring
- › Blowing
- › Whistling
- › Hissing



****Pass around scratch and sniff cards* - this is what oil and natural gas smell like. If you ever smell this, call '911'.***

18. If you think you see, smell, or hear anything strange near a pipeline remember:

- Leave the area immediately.
- Move to a safe location and call '911'. The '911' operator will contact TC Energy and we'll work with emergency responders like firefighters and police to protect people and the environment.
- Call TC Energy's emergency number: 1-800-447-8066.
- Warn others to stay away!

19. What does TC Energy do for safety?

20. Watch this interactive video to see how TC Energy ensures the safety of pipelines
(the video will play automatically after the second click of your mouse).

21. So remember:

- Avoid damaging these utilities by calling or clicking before you dig. Call 811 or visit **www.call811.com**.
- If you smell, see, or hear anything strange near a pipeline call '911' and TC Energy's emergency number: 1-800-447-8066.

22. "Does anyone have any questions?"

Abbreviated Speaking Guide

For use with no AV or shortened time-frame

Estimated time: 10 min (without video and activity),
20 min (with video and activity)

The following guide can be used to direct a discussion around underground utility safety and can be completed in a shorter time frame or without the use of audio/visual. For best results, it is helpful to relate the utilities to something they will remember, such as online gaming disruptions, stinky sewage leaks or possible consequences, depending on the age group.

Hi everyone, my name is _____ and I am here to talk about underground utility safety.

Call or Click before you dig

Does anyone know what underground utilities are? They are cables, pipes and wire that are located underground and provide services to homes and businesses such as gas, water, electricity, and cable/internet.

Have any of you ever seen these types of flags on someone's lawn, in a field or at a construction site? Do you know what they mean? ***Hold up marker flags.***

These flags are used to mark underground utilities. Each color means something different. For example, a yellow flag means there is a pipeline, blue means water, red means electricity and orange means cable/internet.

Play Marker Flag Game if time permits (see Sample Activities).

It is important to respect these flags and never move them or play with them because they are protecting people from hitting underground cables and pipelines when they dig.

Can anyone guess what would happen if you hit an electricity line while digging with machinery or even a hand shovel? Possible answers: the power could go out, you could have to pay the utility company to repair the line, or you could be electrocuted resulting in serious burns or even death. Don't risk your safety or the general public's safety – call or click before you dig!



If your parents are planning to do any digging on your property, such as building a fence or planting a tree, remember to remind them to call 811 or visit www.call811.com to have someone come and mark the underground utilities with these flags. It is a free service, and will prevent your family from endangering themselves or knocking out service.

Show Call Before You Dig video if time permits (see Sample Activities).

Pipeline leak recognition and response

Do you know what a leaking pipeline might sound like?

- It's really loud – roaring, blowing, whistling, hissing

Do you know what a leaking pipeline might look like?

- Dead or dying plants, dirt or water shooting up in the air, frost on the ground, fire coming from the ground
- Rainbow sheen on water or pools of black liquid on the ground (oil only)

Do you know what leaking oil or natural gas smells like?

Pass around scratch and sniff cards if time permits (see Sample Activities).

- It's really gross – some people say it smells like rotten eggs, fuel or a skunk

If you smell, hear or see any of these signs, leave the area immediately and tell an adult to call 911!

Thank you for learning about pipeline and underground utility safety!

Sample Activities

1. Marker flag game

- Teach the children which utility each flag color represents:
 - › **Red** – electricity
 - › **Yellow** – pipelines (gas, oil, steam, petroleum)
 - › **Orange** – fiber optics (phone, TV, internet)
 - › **Blue** – water
 - › **Green** – sewers and drains
- Hand the flags out to the kids (have them pair up if there aren't enough flags).
- Tell the children to be ready to raise their flags right after you say each of the following sentences to test their memory and knowledge about utilities:
 - › “You use me to read at night” **Red**
 - › “You use me to heat your home/cook your food/heat the water for the shower/bake a cake”
Red and **Yellow**
 - › “You use me to go online/watch a movie”
Red and **Orange**
 - › “You use me to wash your hands”
Blue and **Green**
 - › “You use me to flush the toilet”
Blue and **Green**
 - › “You use me to water the growing plants in the field” **Blue**



2. Make a list

- Write each flag color on the board or other display.
- Have the students come up with 3-5 ways they could be impacted if each utility were to be damaged.

3. Call before you dig videos

If time permits, there are two videos on the USB drive about safe digging. One is a two minute animated video for all ages showing two dogs trying to bury their bones. The other, for ages 12 and up, shows U.S. Olympic rower Cliff Meidl sharing his safety incident working on the job when he was young.

4. Scratch and sniff cards

- Ask the children if they know what leaking oil or natural gas smells like. Let them have a few guesses and then explain that it is similar to rotten eggs, fuel or a skunk.
- Pass around a few cards to the children (no more than 5 because the scent is very potent and spreads easily).
- Remind the children to tell an adult to call 911 if they ever suspect that natural gas or oil is leaking.

5. Take home booklets – given at the end of the day

The Take Home Booklets are saved as a pdf on the USB key with this module. Print them for children to take home to teach their parents about underground utility safety.

YES Kit Contents:

The following materials are provided in the School Kit:

- Scratch'n'Sniff cards - hand out 4 or 5 of these in the lesson to demonstrate what a gas leak could smell like. Careful, they are potent!
- Color code magnets - a take-home reminder of what the flags mean
- Binder inserts - a useful way to remind kids of utility safety every day
- Pipeline Marker and flags - visuals to help with learning and games
- Cartoon posters - can be used as colouring tool and hung in classrooms or hallways
- Multimedia USB - includes presentation tools, printable resources and more

Refill the Kit

The Youth Safe Energy Kits are intended to be re-used year over year. If you or one of your colleagues would like to make the presentation again, please request a refill at www.youthenergysafe.com/request-a-refill

Thank You!

Contact us

If children, teachers or parents have questions with regards to calling/clicking before you dig, pipeline safety or TC Energy, please refer them to TC Energy's Public Awareness team.

If you have any questions or concerns about the module, please contact us!

Email: public_awareness@tcenergy.com

Phone: 1-855-458-6715

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