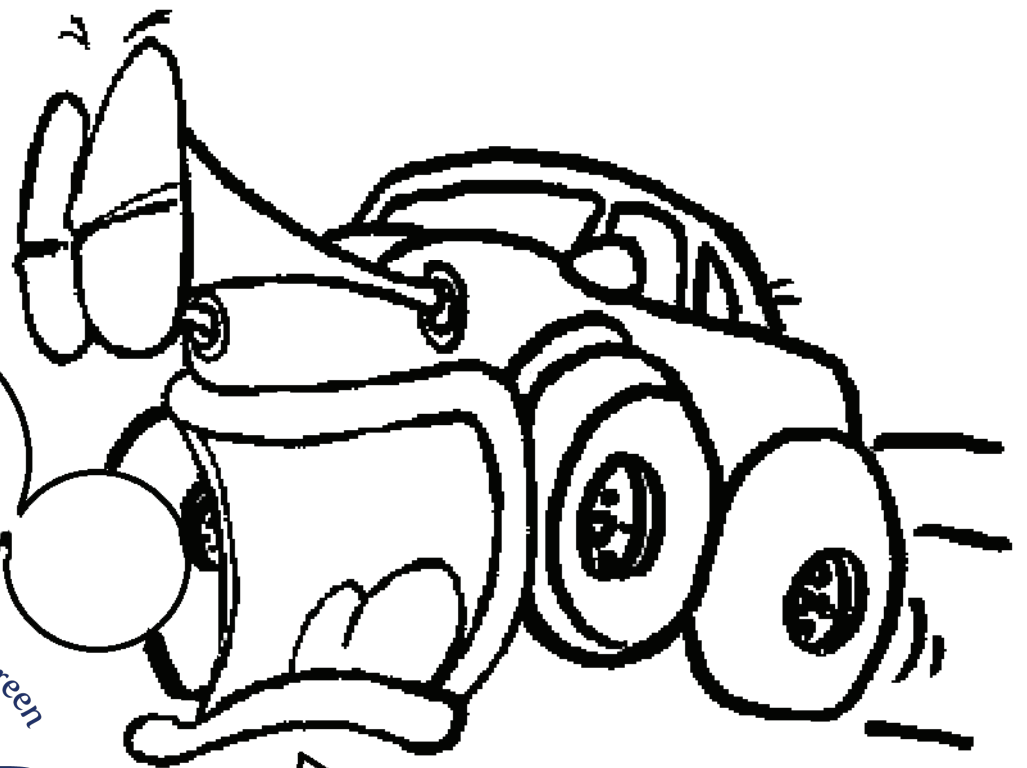


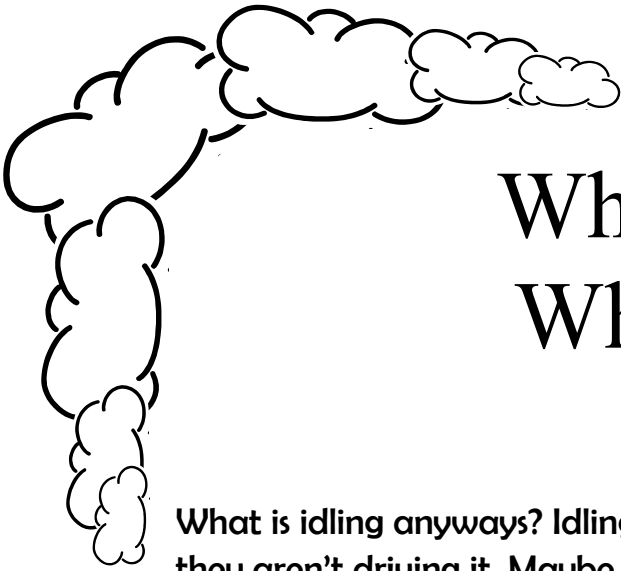
Anti-Idling Activity Book



CITY OF DUNCAN



**Colour
Me!**



What is Idling? Why is it bad?

What is idling anyways? Idling is when a person leaves their car running when they aren't driving it. Maybe you see your mom or dad do it on their way to work. Maybe you see your bus driver idle when they drop you and your friends off at school. People idle their cars all the time! What some people don't understand, like maybe your parents or your bus driver, is that idling is bad for your health and the environment. There are many places around the world that understand idling is bad, so they are trying to find ways to stop idling, like making it against the law, or by telling their friends and family idling hurts us and the environment. Even kids like you are telling their parents to turn off their car when they aren't driving!

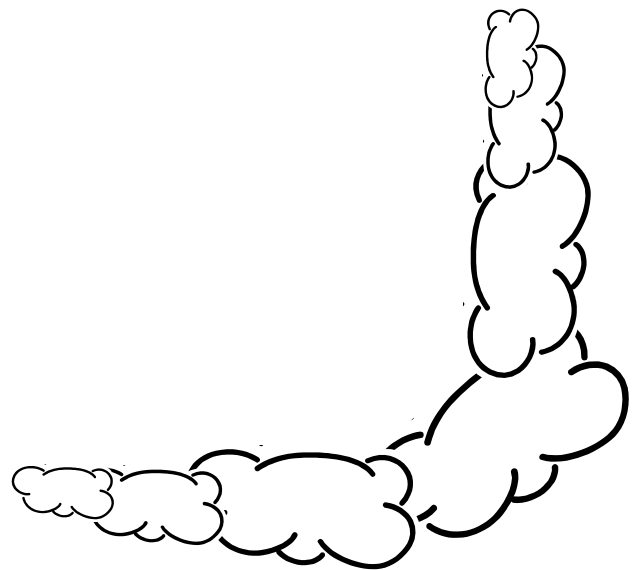
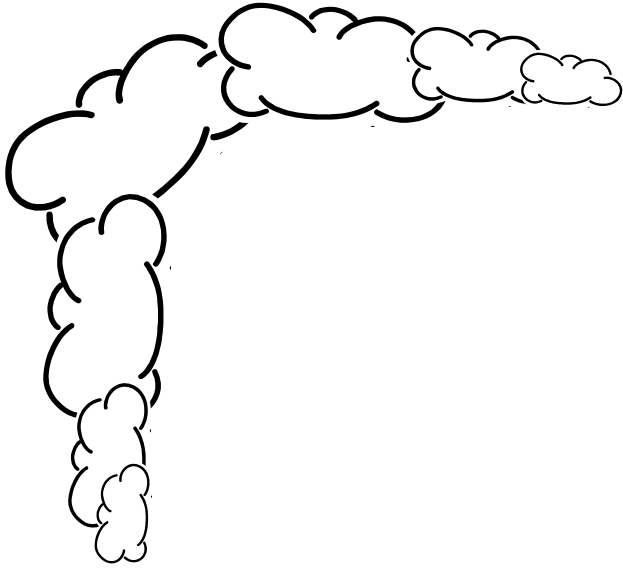
You can put a stop to idling too by making your own anti-idling sign!

Here are some ideas to get you started!



Make Your Sign Here!

Be as creative as possible! You can put whatever you want on your sign. You can put this sign in your mom or dad's car to remind them to be idle free!



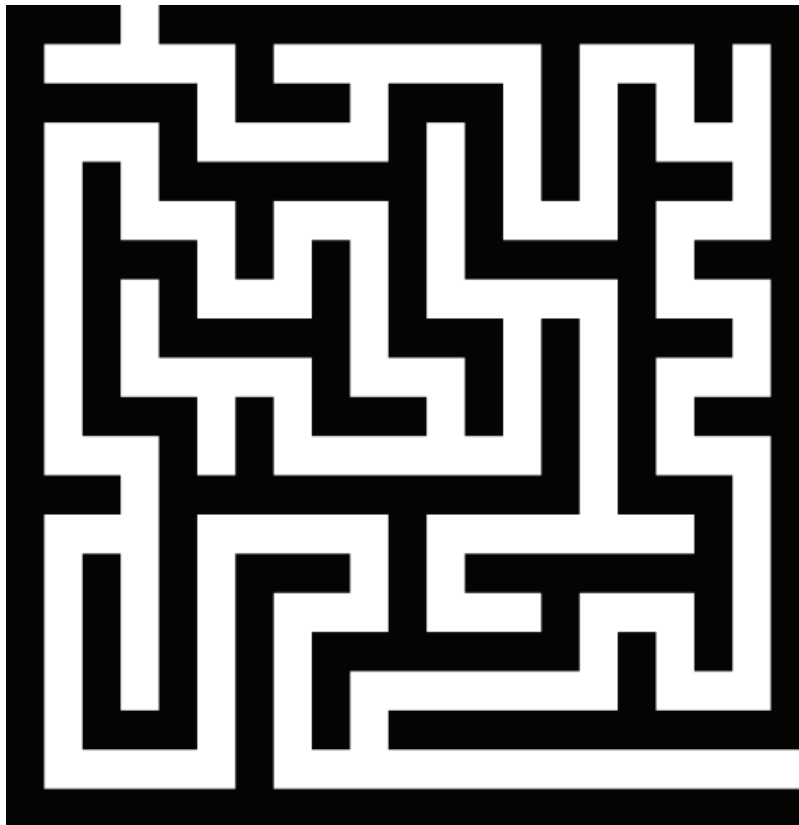
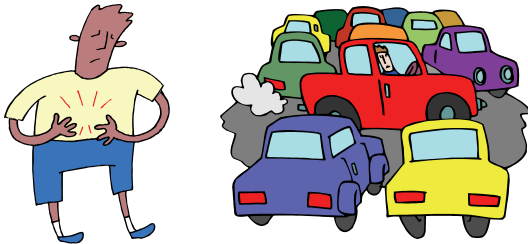
How Idling Affects Your Health

When people idle their cars, it adds unnecessary car exhaust into the air we breath. Breathing in car exhaust hurts our lungs. Car exhaust from driving or idling a vehicle makes it easier for adults and kids, like you, to get asthma, bronchitis, and other diseases that make it difficult to breath.

This boy is feeling sick from all the car exhaust he is breathing in!

Help him get out of the polluted air to the nice clean park!

Start Here!



Vehicle Emissions

These are some of the chemicals you can find in car exhaust that affects our health and the environment.

Match each number to the corresponding letter to create a word.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
14	15	16	17	18	19	20	21	22	23	24	25	26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

3	1	18	2	15	14

13	15	14	15	24	9	4	5

2	5	14	26	5	14	5

14	9	20	18	15	7	5	14

4	9	15	24	9	4	5

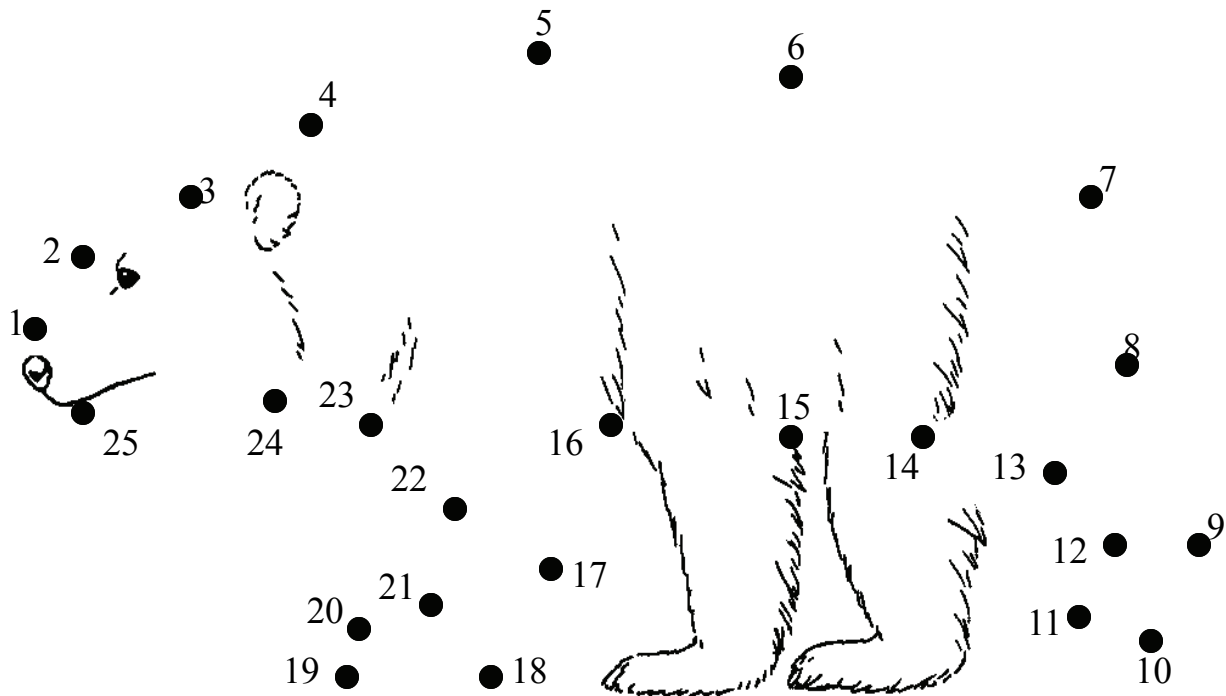
6	15	18	13	1	12	4	5	8	25	4	5

How Idling Hurts the Environment

Car emissions contribute to acid rain! Car exhaust has nitrogen oxides and sulfur dioxide in it. Those chemicals combine with water or oxygen, and then turns into acid rain. When acid rain gets into our lakes and rivers, the animals that drink the water can become sick. Plants and trees are hurt by acid rain too.

Exhaust adds to global warming too! Car exhaust contains carbon dioxide which adds to an increase in temperature causing the earth to get warmer. The warm temperatures can affect the survival of many insects, animals, birds, and plants—like polar bears! Icebergs are melting in the arctic, and the polar bears need the icebergs to live on.

Connect the dots to reveal the hidden picture!



Hint: They are one of the most affected animals, because of climate change.

What Produces Harmful Emissions

We have many different ways of getting places. Some people drive cars, ride bicycles, ride motorcycles, or even walk! The only difference is that some ways of getting places are harmful to our health and the environment.

Circle the objects that produce harmful gasses that pollute the air





Catch the Pollution

Make yourself a pollution catcher to see what kinds of things may be polluting the air.

Materials:

- Empty food can — fill it with stones
- Double-sided scotch tape
- Marker
- Magnifying lens
- Compass (optional)

What is particulate matter? And why is it a problem?

Our atmosphere is almost completely made up of invisible gaseous substances. Most major air pollutants are also invisible gaseous substances, although large amounts of them concentrated in areas such as large cities can be seen as smog. However, one visible air pollutant is particulate matter. Particulate matter is made up of tiny particles of solid matter and/or droplets of liquid, and can be soot, ash, pollen, dust, etc.

There are some natural sources of particulate matter, such as volcanoes and the wind blowing up dust. Human sources, such as burning coal and oil in power plants, and burning wood in fireplaces, can send a lot of particles into the air also. Particulate matter can be harmful to plant, animal, and human life when the pollutants are breathed in. The particles can also make buildings dirty.

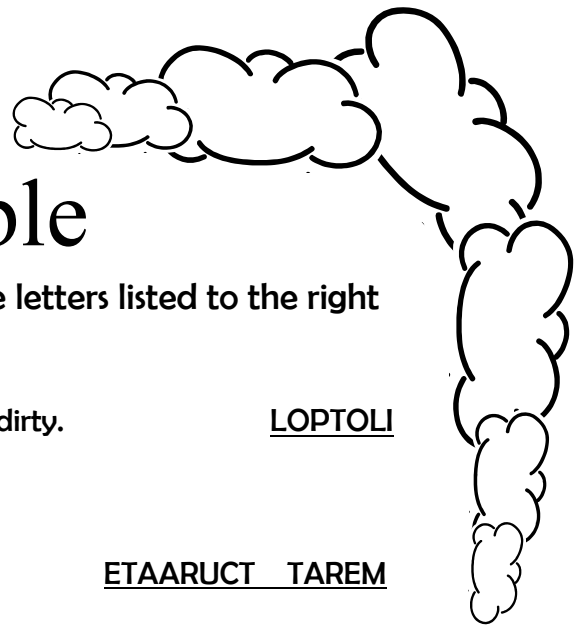
How to Make a Pollution Catcher

1. Find a place outdoors where you can sit the can without anyone touching it, such as a window ledge, or fence post.
2. Take the can and peel the label off.
3. Optional - Use the marker to write North, South, East, and West on the can. Use a compass to tell where north is. After completing step 4, place the can facing the right direction.
4. Cover the sides of the can in double sided scotch tape. Try to touch the tape as little as possible.
5. Place the can outside in the place you chose.

Did you catch any pollution?

After a week, check and see what kinds of things are stuck to the tape. You may want to use a magnifying lens to have a closer look. Did you catch any pollution?

Word Scramble

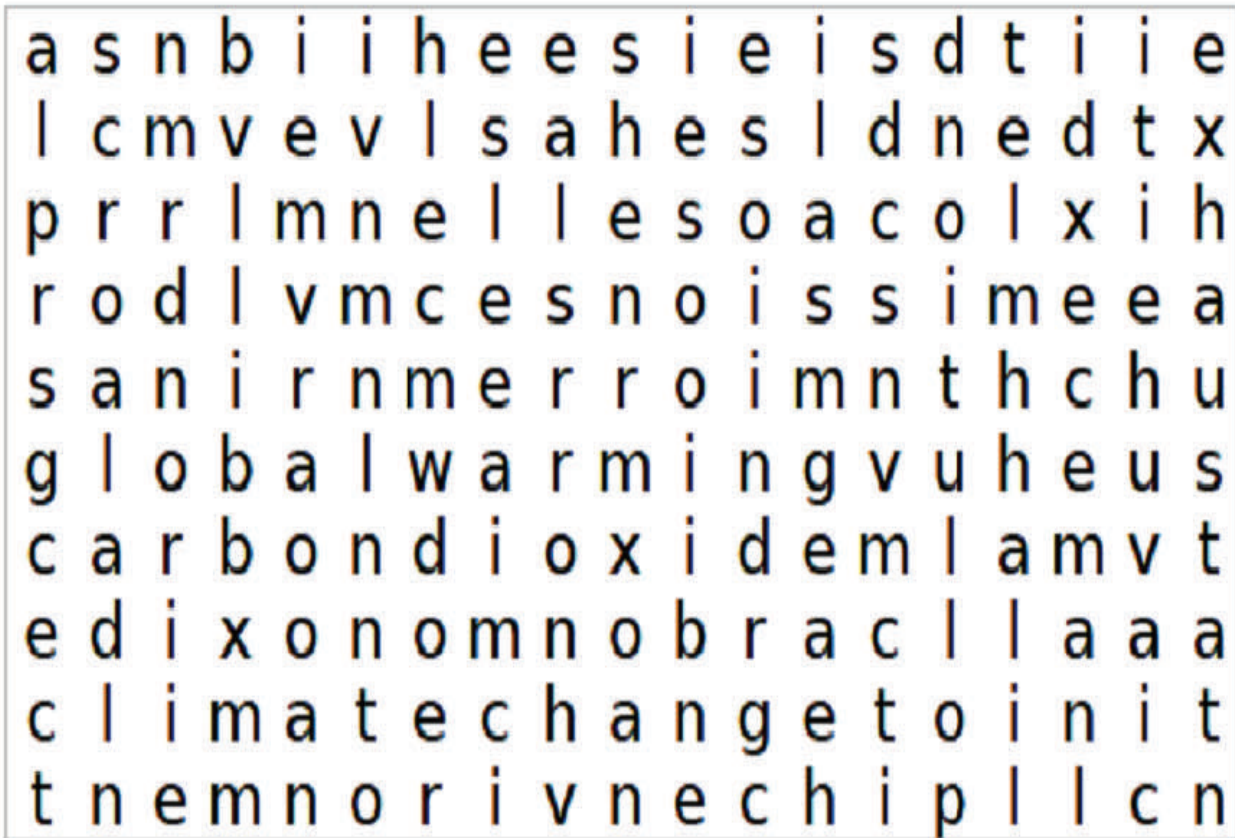


Solve the word puzzles by filling in the blanks with the letters listed to the right of each clue.

- Produced by vehicles, fires and people that makes the air dirty. LOPTOLI
_ _ _ _ U _ _ _ N
- Small pieces of dirt and dust in the air. ETAARUCT TAREM
P _ _ _ I _ _ L _ _ _ _ _ T _ _ _
- When found near the ground, this is a harmful kind of air pollution. NEOZ
O _ _ _ _
- We breathe this gas out. RCNOA IIDEO
_ _ _ B _ _ _ D _ _ X _ _ _
- The gradual increase in the temperature of the Earth's atmosphere. LLOAG RANIGW
_ _ _ B _ _ _ _ _ M _ _ _
- Cars, trucks, planes, trains and boats are all different forms of this. OROTTNAIASP
T _ _ N _ _ _ R _ _ _ _ _ _
- Solar, wind and hydro are all reusable types of this. EWEALE ERYE
R _ N _ _ _ B _ _ _ _ N _ _ G _
- People who have trouble breathing may suffer from this disease. AMSTA
_ _ _ H _ _
- What helps everyone breathe easier? LNAC RA
_ _ E _ _ _ _ I _

Idling Word Search

Find the words that are related to idling!



Idling

Carbon Monoxide

Asthma

Climate Change

Global Warming

Carbon Dioxide

Pollution

Exhaust

Environment

Health

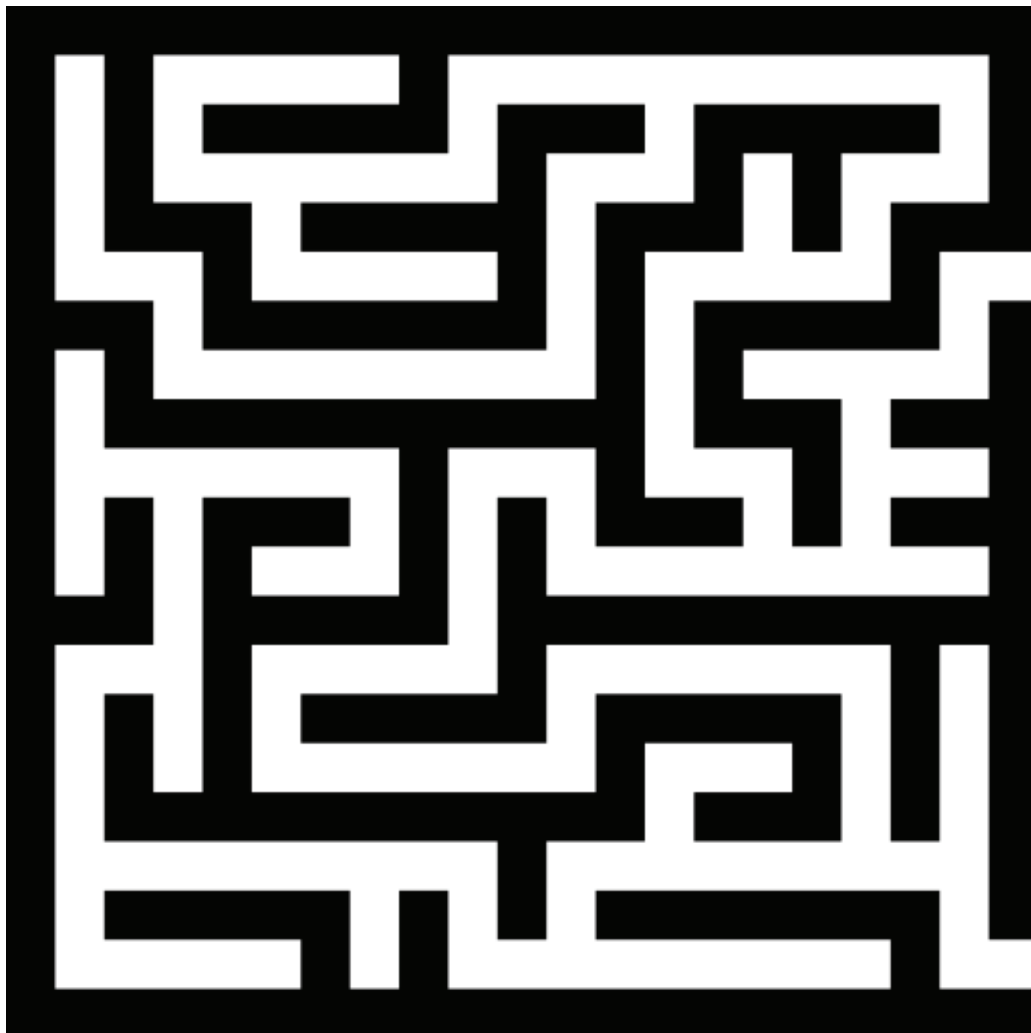
Vehicle

Emissions

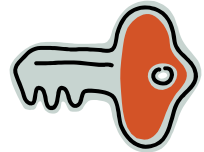
Get Your Parents to Turn off Their Engines

Now that you know everything you need to know about car idling, you can ask your parents to turn off their engines when their car is parked!

Help the key find its way to the idling car!



Start Here!





Beat the Challenge!

1. Idling wastes fuel and money and impacts the environment. True or false?

TRUE: Right. Idling wastes a significant amount of money because it burns fuel but doesn't get you anywhere. It also impacts the environment because it produces greenhouse gas emissions from the vehicle.

2. With the advanced emissions technology used in today's vehicles, carbon dioxide (CO₂) emissions from an idling vehicle are greatly reduced. True or false?

FALSE: Good answer! While it's true that advanced emission control technologies have succeeded in reducing emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and oxides of nitrogen (NO_x), – which can contribute to air quality problems – emission control systems do not reduce carbon dioxide (CO₂). This is an unavoidable by-product of burning gasoline or diesel fuel. But we can avoid burning fuel and producing CO₂ emissions by eliminating unnecessary vehicle idling.

3. Idling contributes to the climate change problem. True or false?

TRUE: Right. Carbon dioxide (CO₂) – the principle greenhouse gas that contributes to climate change – is classified as a greenhouse gas because it increases the earth's natural "greenhouse effect" and in doing so is altering the world's climate. CO₂ is an unavoidable by-product of burning gasoline. Each litre of gasoline that is used produces about 2.3 kg of CO₂. Therefore, every time you start the engine, you're contributing to climate change.

4. In the winter, the best way to warm up a vehicle is to drive it. True or false?

TRUE: Very good – The best way to warm a vehicle up is to drive it. With today's computer-controlled engines, even on cold winter days no more than two to three minutes of idling is usually enough warm-up time before starting to drive. Also many parts of the vehicle – including the wheel bearings, tires and suspension system – will warm up only when the vehicle is moving. Until the engine temperature begins to rise, it's a good idea to avoid high speeds and rapid acceleration until all parts are warmed up. It's also important to ensure that windows are free from snow and properly defrosted before driving away!

5. Idling warms up the entire vehicle: True or false?

FALSE: Another good answer. Many components of the vehicle – including the wheel bearings, tires and suspension system – will warm up only when the vehicle is moving. Actually, the best way to warm it up is to drive it. In fact, with today's computer-controlled engines, even on cold winter days two to three minutes of idling is usually enough warm-up time before starting to drive



6. It's a good practice to shut off the engine when your vehicle is going to be stopped for more than 60 seconds. True or false?

TRUE: Right. Believe it or not, idling for over 10 seconds uses more fuel (and produces more CO₂) than restarting your engine. However, as a guideline, if you're going to stop for 60 seconds or more – except in traffic – turn the engine off. You'll save money on fuel that should more than offset any potential increased maintenance costs from any extra wear and tear on your starter or battery. And your vehicle won't produce emissions of carbon dioxide, the principle greenhouse gas contributing to climate change.

7. I should turn my vehicle off when I'm caught either in stop-and-go traffic or at a long stoplight. True or false?

FALSE: The 60-second rule is a good one, but remember, you can't avoid some idling. Turning off your vehicle in these situations is a safety hazard. The engine should be left running in case of an emergency situation.

8. Idling is a problem only in winter. True or false?

FALSE: Right, idling is a problem year-round. Calculations drawn from a Canadian study on driving habits and behaviours found that on any given day in August, Canadians idle their vehicles for a combined total of more than 46 million minutes per day – equal to one vehicle idling for 89 years. The problem is worse in winter, but there's never a good time to waste fuel and generate greenhouse gas emissions by idling your vehicle.

9. Making sure it's safe to drive the vehicle away is more important than reducing idling time. True or false?

TRUE: Good answer! Safety should always be your first consideration. Make sure that the vehicle's windows are clear of ice and snow and are defrosted before you pull away. To prevent your car windows from fogging up, clear snow from the air intake on top of the hood and open a window as soon as you enter the vehicle.

10. If you are going to be stopped for more than 60 seconds, turning the engine off saves money.

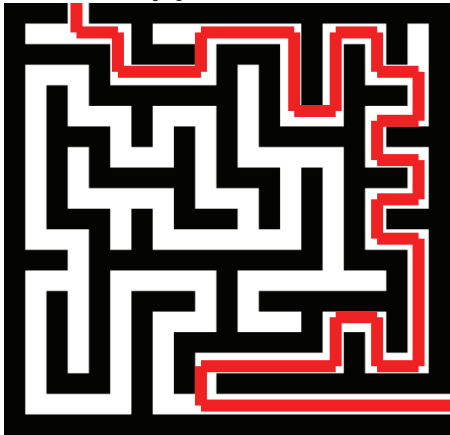
TRUE: Yes, if you turn the engine off for more than 60 seconds you should be saving money. The break-even point to offset any potential incremental maintenance costs due to wear and tear on the starter and battery is under 60 seconds.

11. A poorly tuned engine, whether you're driving a vehicle down the road or letting it idle, uses up to 15 percent more fuel than a well-tuned vehicle. True or false?

TRUE: Right again! Whether you're driving a vehicle down the road or letting it idle in your driveway, a poorly tuned engine will consume more fuel – and generate more greenhouse gas emissions – than one that you properly maintain.

Answer Page

1. Maze



4. Circle the Objects



2. Word Match

3	1	18	2	15	14
C	A	R	B	O	N

13	15	14	15	24	9	4	5
M	O	N	O	X	I	D	E

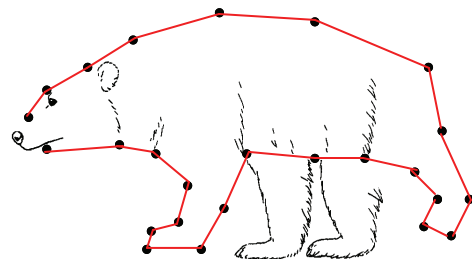
2	5	14	26	5	14	5
B	E	N	Z	E	N	E

14	9	20	18	15	7	5	14
N	I	T	R	O	G	E	N

4	9	15	24	9	4	5
D	I	O	X	I	D	E

6	15	18	13	1	12	4	5	8	25	4	5
F	O	R	M	A	L	D	E	H	Y	D	E

3. Connect the Dots

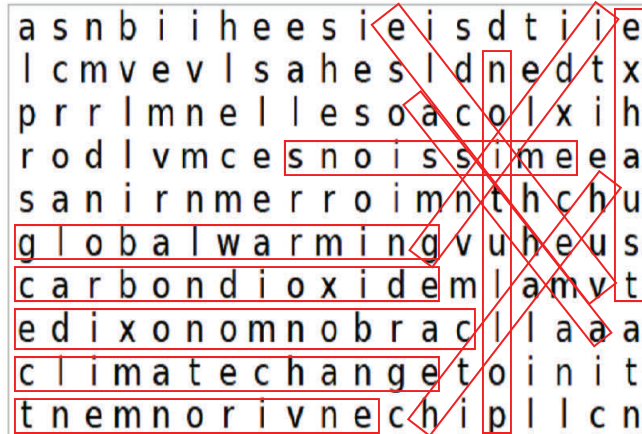


Answer Page 2

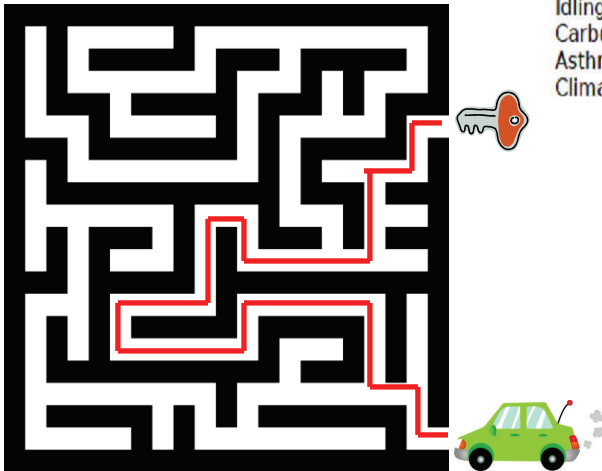
5. Word Scramble

1. Pollution
2. Particulate matter
3. Ozone
4. Carbon dioxide
5. Global warming
6. Transportation
7. Renewable energy
8. Asthma
9. Clean air

6. Word Search



7. Maze 2



- | | | |
|-----------------|----------------|-------------|
| Idling | Global Warming | Environment |
| Carbon Monoxide | Carbon Dioxide | Health |
| Asthma | Pollution | Vehicle |
| Climate Change | Exhaust | Emissions |

THE CORPORATION OF THE CITY OF DUNCAN
BYLAW NO. 3004, 2011
A Bylaw to regulate the idling of vehicles within the City of Duncan

WHEREAS a municipality may, by Bylaw, regulate, control, and prohibit stopping, standing, or parking of vehicles in the municipality;

AND WHEREAS a municipality may, by Bylaw, regulate, prohibit and impose requirements with respect to the protection and enhancement of the well-being of its community in relation to the emission of smoke, fumes and other effluvia that is liable to foul or contaminate the atmosphere;

AND WHEREAS some motor vehicles emit smoke and fumes which are the source of particulate matter, nitrogen oxide, carbon monoxides, sulphur dioxide and other volatile organic compounds that are liable to foul or contaminate the atmosphere;

AND WHEREAS the Council of the City of Duncan encourages drivers to refrain from idling their vehicles;

AND WHEREAS the City of Duncan is committed to reducing greenhouse gases in its operations and within the community;

NOW THEREFORE the Council of the City of Duncan enacts as follows:

1. This Bylaw may be cited as "City of Duncan Anti-idling Bylaw No. 3004".
2. In this Bylaw:
"Idle" and "idling" mean the operation of an internal combustion engine of a vehicle while the vehicle is not in motion; and
"Vehicle" means a rubber-tired or tracked vehicle(s) that is designed to be self-propelled by an internal combustion engine but does not include a motor-assisted cycle or a vehicle operated wholly or in part by an electric motor, while idling.
3. No person shall cause or permit a vehicle to idle for more than one (1) minute.
4. Section 3 does not apply to:
 - a. Vehicles idling while passengers are embarking or disembarking;
 - b. Vehicles idling because of traffic, weather, an emergency, or mechanical difficulties over which the driver has no control;
 - c. Armoured motor vehicle, used to transport money or valuables, in which a person remains to guard the contents, in the course of the loading or unloading of such money or valuables;
 - d. Police, fire, ambulance, or other emergency motor vehicle in the course of the performance of police, fire, ambulance or other emergency duties including training activities, except where idling is substantially for the convenience of the operator of the vehicle;
 - e. A motor vehicle in the course of assistance in an emergency;
 - f. Vehicles engaged in the course of a parade or any other event authorized by Council or other delegated person;
 - g. Vehicles engaged in a mechanical test or maintenance procedure for which idling is required;
 - h. Vehicles that must remain idling so as to power a heating or refrigeration system for the preservation of perishable cargo; and
 - i. Vehicles that must remain idling so as to power any tools or equipment necessary for or incidental to the provision of services by a municipality or a public utility.
5. Every person who contravenes any provision of this Bylaw is guilty of committing an offence against this Bylaw and is liable on summary conviction to a fine of not less than \$250.00 and to a maximum not exceeding the maximum allowed by the *Offence Act*, as amended, and the cost of prosecution.
6. Any person who is guilty of obstructing a Bylaw Enforcement Officer while performing his/her duties in relation to this Bylaw is liable on summary conviction to a fine of not less than \$2,000.00, or to imprisonment, or to both a fine and imprisonment, not exceeding the maximum allowed by the *Offence Act*, as amended, and the cost of prosecution.
7. This Bylaw may be enforced by means of a Municipal Ticket.
8. The provisions of this Bylaw may be enforced by any City of Duncan Bylaw Enforcement Officer or member of the Royal Canadian Mounted Police (RCMP).
9. If any part, section, sentence, clause, phrase or word of this Bylaw is for any reason held to be invalid by the decision of any Court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid shall not affect the validity of the remainder which shall continue in full force and effect and be construed as if the Bylaw had been adopted without the invalid portion.
10. This Bylaw shall come into force and take effect on the 1st day of January, 2012.
11. READ A FIRST TIME THE 17th DAY OF JANUARY, 2011.
READ A SECOND TIME THE 17th DAY OF JANUARY, 2011
READ A THIRD TIME THE 17th DAY OF JANUARY, 2011.
ADOPTED THE 21st DAY OF FEBRUARY, 2011.



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