

EARTH DAY PBL

Organize a Debate!

3rd – 5th
Grades

SENTENCE STARTERS to use when responding to others

"I think your suggestion that _____ is interesting because _____."

"Can you explain what you mean when you said _____?"

"I heard you say that _____"

SAY NO TO MEAT

Global warming is a big problem for Earth. Fossil fuels cause global warming. Eating hamburgers does too. Making just one hamburger uses enough fossil fuel to drive a small car 20 miles. Humans eat an average of 50 billion hamburgers each year. Think about how much fossil fuel that is! Producing beef creates more greenhouse gas than foods such as potatoes and rice. One way that we can limit all the greenhouse gas created from hamburgers is to stop eating meat.

Raising animals such as pigs and cows for food is not good for the environment. Large pieces of cleared land are needed for grazing and to grow food for such animals. About 260 million acres of U.S. forest have been cut down for these purposes. Loss of trees affects animals living in these forests. Some animals face becoming endangered or extinct. Fewer trees also means more carbon dioxide in the air. More carbon dioxide makes global warming and climate change worse. In addition, fire is often used to clear this land. This releases even more carbon dioxide into the air.

These animals also require large amounts of water. It takes 2,500 gallons of water to create one pound of meat. Producing wheat, however, only takes 25 gallons. The waste that these animals make is another concern. It often pollutes rivers and streams. Either we are wasting water or making it dirty by raising animals to eat as food.

Eating less meat isn't that much of a challenge. Choosing to have chicken or pork instead of red meat is a start. Raising both of these animals for food uses less land and water. It produces less greenhouse gas as well. There are also many plant-based options nowadays. Food companies have developed products that look like meat. They are made from plants instead and often taste as good as real red meat.

Humans must make better decisions. We need to eat things that don't further harm our planet. Saying no to meat will allow us to say yes to fighting global warming.



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For The Teacher



This **Organize a Debate** Project Based Learning packet was created for 3rd - 5th grade students. The activities included will allow your students to practice their speaking and listening skills in an engaging way. The standards addressed in this packet include:

- **3RD GRADE**

SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons.

W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

- **4TH GRADE**

W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

W.4.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

- **5TH GRADE**

RI.5.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

For The Teacher

1. Explain the project to students: They will be reading about some Earth Day topics/controversies and engaging in a debate with their classmates.
 - NOTE: There are two versions of the PBL activity included in this packet. You can choose to have students read and use the information from the provided Earth Day articles, or students can use the research guide to conduct their own internet research to find information on a topic of their choice. With either option, students will use the information they read to form an argument. Choose the option that is best for your students and the time you have allotted for this PBL activity.
2. Review the debate vocabulary words, activity explanation, and sentence starters provided. These can be printed for students, projected for the class to see, or displayed in your classroom for reference.
3. We have provided a debate example for you to use to model the process for students before they begin their own reading/research and formulate their own arguments. There are so many ways to use this example debate: whole class, small groups, or partners are all possible.
 - Use the passages “Big Bad Plastic” (opposed to plastic use) and “Plastic Isn’t Evil” (in support of plastic use) to show how an author’s view can differ on the same topic. Have students read the passages and determine if the author is for or against plastic use. Students can find text evidence to support their thinking. Discuss how the authors back up their opinions with factual information.
 - Show students the completed arguments and how the facts and opinions from each passage were used to create the argument. For an advanced class, let students try to complete an organizer on their own first before showing the completed one. Point out how information is retrieved from the text and not directly copied.
 - Next, allow students to watch the debate video. This will show a debate (using these exact arguments) in action! [Click here to view the video.](#)
4. Assign or allow students to choose from the Earth Day passage topics provided: “Say No to Meat” & “Green Light for Carnivores,” “Too Many Paper Towels” & “The Right Tool,” “Electric Cars Aren’t the Answer” & “Plug In and Go,” “The Device Dilemma” & “It’s Up To Us.”
5. Give students time to complete the argument organizer using their passage to prepare for the debate! Make sure to review the sentence starters and have students decide which ones they are going to use.
6. If you choose to have students conduct their own internet research, project the “More Earth Day Topics” sheet to give students some ideas. They will also need the research organizer to compile their notes before completing the argument organizer.
7. After the debates, allow students time to complete the reflection sheet.



Talking Point

Talking points are main ideas used to support your argument. Talking points are backed by research and have examples.



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Stance

A stance is a perspective, viewpoint, or position on a topic. In debates, there is usually a “pro” side and a “con” side.



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Debate

A debate is an organized discussion between 2+ people. Debates have a specific topic or issue that people present their stance on.



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Argument

An argument is similar to a stance. It is a viewpoint on an issue. In debates, people deliver a factual argument on a topic.



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Evidence

Evidence includes facts and specific information about something. Evidence is used to support talking points in a debate.



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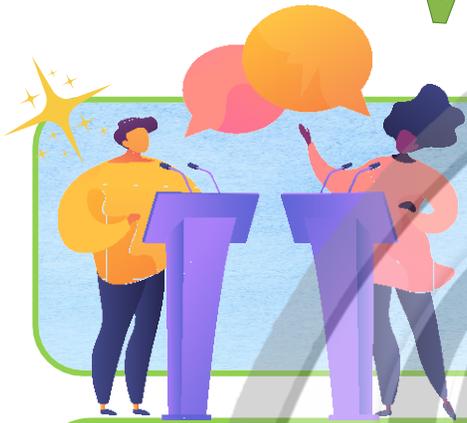
Opposing View

The view of those on the other side of the argument. The opposing view is important to consider when organizing your argument.



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WHAT IS A DEBATE?



A debate is an organized, public discussion between two or more people. Each debate has a specific topic or issue, and each participant must present a different perspective to the audience.

Each participant either chooses or is assigned a stance. A stance is a perspective, viewpoint, or position on a topic. Generally, there is a “pro” side that supports the topic, and a “con” side that opposes it. The delivery of a specific stance is usually called an “argument.”

No matter which side you are arguing, it is important to consider the opposing argument. This is the view/perspective of the other side. Anticipating the opposing views will help you strengthen your talking points and prepare to respond to theirs.

Research is one of the most important parts of participating in a debate. Regardless of their stance, the participants must research all sides of a topic in order to fully understand the issue. This will help each participant develop their talking points.



SENTENCE STARTERS

to use when delivering talking points

"I am suggesting
that _____
because _____."

"In my research, I
found that _____."

"The next
thing I would
like to discuss
is _____."



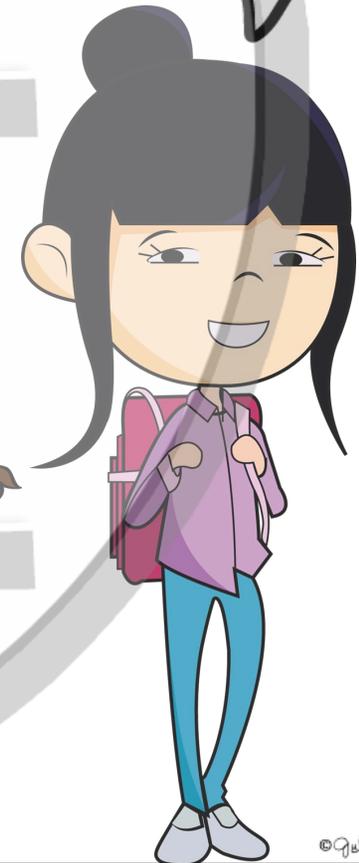
SENTENCE STARTERS

to use when you are agreeing with others

“My idea is similar to _____’s idea that _____.”

“I agree with what you said because _____.”

“I hear what you said about _____. I also think that _____.”



TOO MANY PAPER TOWELS

It's a hot day. You're incredibly thirsty. You pour yourself a tall glass of water. Before you can drink it, however, you accidentally knock it over. Water spills everywhere. You reach for paper towels to clean up the mess. When you're finished, you throw the used paper towels away.

But do they really go *away*?

Paper towels are a big convenience in our lives. They are perfect for quick clean-up jobs, but they are actually making a bigger mess. While individual sheets of paper towels may not seem like a problem, we have to consider what goes into producing them. It starts with trees. It takes 17 trees to make just over one ton of paper towels. This means forests are cleared. Cutting down trees disrupts the habitats of animals. Less carbon dioxide is pulled out of the air with fewer forests. This adds to global warming concerns. To balance the number of trees needed to make the number of paper towels used in a day, 51,000 new trees would have to be planted per day. The problem is that no one is planting all those new trees. Manufacturing, packaging, and distributing paper towels all use energy and release more carbon dioxide into the air.

Another disadvantage of paper towels is they create waste. The paper towels we use end up in the landfill. They do break down fairly quickly in about 2-6 weeks. The challenge, however, is the *number* of paper towels that are thrown away. It takes up a great deal of space in landfills. As it breaks down, it produces methane. This is a greenhouse gas that contributes to global warming. It is more harmful than carbon dioxide.

Unfortunately, recycling paper towels isn't an option because they can't be cleaned. Paper towels can be composted, but not if they are bleached or too soiled. In addition, paper towels aren't just made of wood pulp. They have chemicals, such as dyes, in them to make them white and sturdy. These chemicals are harmful to humans and the environment over time.

The good news is that we don't have to use paper towels. We have other choices that are healthier for the planet and humans. Cloth towels are cheap and convenient. They can be used, washed, and reused. Natural sea sponges are another possibility. One of these sponges can replace about 3,000 paper towel sheets! If you simply must use paper towels, try using ones that are unbleached or made from recycled paper. At the very least, make an effort to use fewer paper towels overall.



THE RIGHT TOOL

Climate change is on everyone's mind. Storms have grown fiercer. Temperatures have become more extreme. Ocean levels have risen. We've been warned that we need to take steps to reduce greenhouse gases in the air if we have any chance of fighting global warming. Living a greener life is a way to help. Does that mean we need to get rid of convenience?

One thing that makes our lives easier is using paper towels. They help us clean messes quickly. We've been encouraged, however, to stop using this product. It's been accused of being harmful to the environment. Other options have been presented, but they aren't better.

Take cloth towels and napkins, for example. They can be cleaned and reused. The energy and resources needed to wash them is a problem, though. Hot water, electricity, and detergent all cost money and have their own negative effects. Also, some microfiber cloths are made from petroleum-based polymers. Each time you wash these cloths, microplastics that never break down are released. They make their way into our water and pollute it. Paper towels, on the other hand, break down in 2-6 weeks in landfills, and they do not add microplastics to our water.



Another difficulty with using cloth towels is they are exposed to wet, humid conditions. They also absorb unpleasant substances when they are used to wipe up messes. This creates a breeding ground for nasty bacteria and mold. Without proper disinfecting, you could spread that bacteria and mold every time you swipe that dirty cloth along a surface. Sponges create the same problems. Illness could be caused by using infected cloths and sponges instead of paper towels.

Sometimes paper towels are just the right tool for the job. When it comes to cleaning up substances such as grease and oil, a paper towel is the way to go. A cloth towel would only become stained and have to be thrown away. It would take longer than a paper towel to break down in a landfill, too.

Paper towels aren't so horrible. They make our lives easier and more sanitary. There are worse causes of global warming and climate change than cleaning up spills with handy and germ-free paper towels. We need to focus our energy on solving the bigger problems.

ELECTRIC CARS AREN'T THE ANSWER

Americans spend, on average, more than 17,600 minutes driving cars each year. Cars are very important to people. They allow us to carry out our day-to-day business. Environmentalists tell us that all this driving is bad for the environment. They may be right. We don't live in a world where we can just stop driving, though. Electric cars have been suggested as a better means of travel, but they have their downsides, too.

Electric cars can't travel as far as gas-powered cars. An electric car can go between 60-120 miles on a single charge. Cars that run on gas, however, can enjoy about 300 miles on one tank of gas. Some fuel-efficient cars can go even farther. You'd have to stop to recharge an electric car if you take long trips. That would be inconvenient. Finding places along your route to charge might also be a challenge.



Recharging an electric car isn't quick either. Some battery packs in electric cars can take up to 8 hours to gain full power. Even fast-charging stations can add another 30 minutes to your travel time. People don't have that much time to waste. Filling up at the gas station is faster. It's easier than recharging a battery in an electric car.

At this point, electric cars are still very expensive, too. In 2021, the average price of an electric car was about \$57,000. That's about \$10,000 more than gas-powered vehicles. These prices put electric cars in the luxury class. That makes them unaffordable for many drivers. Furthermore, the rechargeable battery may need replacing. These batteries are also costly. Some experts say these batteries cause a problem when they are no longer usable and need to be thrown away.

Electric cars may offer some benefits, but they aren't the perfect solution. Limits on travel distance, recharging challenges, and cost make electric cars a less attractive option than gas-powered vehicles. More research and improvements are needed before switching our reliable travel methods to ones based on electricity.



PLUG IN AND GO

Every day we hear more bad news about climate change. We are trying to take action to preserve our planet. One way to help is to choose an electric car instead of one operated by fuel. Electric cars have many advantages.

Cars run by electricity are energy savers. They use energy in much better ways than fuel-powered cars do. The batteries in electric cars change 59-62% of energy into moving the vehicle. Cars that run on gas, however, only change 17-21%. Customers who buy electric cars get more power than people who fill their cars with gas. Money is also saved because drivers aren't spending it on gas, which has become expensive.

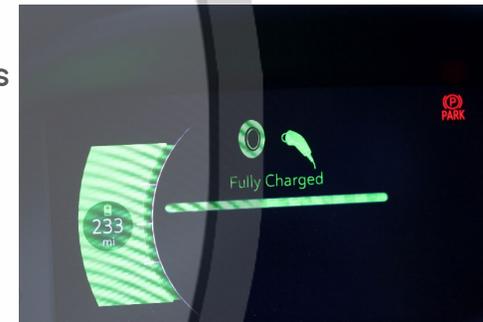
Electric cars are kinder to the environment. They run on rechargeable batteries. Driving an electric car does not pollute the air with the emissions that gas creates. These batteries have been improved over the years, too. An electric vehicle can travel about 43 miles for a cost of only \$1.00. A gas-guzzling car, however, can only travel about 10 miles for the same price.

High performance and low maintenance are two more features of electric cars that make them a better choice. The motors in electric cars are quiet. They also run smoothly. They are less complicated than engines that operate on gas. This makes them easier to keep working properly. Electric cars also react more quickly. They are safer to drive.

Electric cars are more expensive to buy right now. Drivers save money - and the planet - in the long run, though. Owners of electric cars spend less on fixing them than drivers of gas-powered vehicles. They are also cheaper to power. We can reduce the amount of greenhouse gases being pumped into the air if more people buy electric cars. A decrease in these harmful gases means we can slow climate change. With more car companies offering electric car options, buyers have many choices.



We've relied on gas-powered cars for a long time. Now it's time to make greener decisions. We need to be less dependent on fossil fuels that damage our planet. People love to travel by car. They aren't about to give that up. What they can do, however, is choose a car that won't add to our global warming problem. Electric cars are available and ready to improve the situation.



THE DEVICE DILEMMA

People depend on electronic devices to run their lives. Cell phones, computers, and televisions are used on a daily basis. They make working more efficient and play more entertaining. Unfortunately, electronic devices also threaten our environment. We make around 40 million tons of electronic waste each year. That's the same as throwing away 800 laptops every second!

Many materials are needed to make electronic devices. Steel and aluminum are used for cases. Copper is used for wiring. Lithium is in some batteries. These materials are difficult to mine. Mining them creates large amounts of waste that can change and destroy the environment. Digging for these materials also causes air and water pollution because it releases toxins. There are regulations that some nations have put into place to control the mining of these materials, but they are not always followed.

It's more than just mining these materials that is harmful to the planet. Processing them so they can be used in electronics poses a problem, as well. They need treatments with strong acids. This causes more waste to be produced that can end up as pollution. A large amount of energy is also needed to process these materials. The parts that are made need repeated cleaning, too. Water is mixed with harsh chemicals. The waste often ends up in water supplies. Factor in that plastics are also necessary to make electronic devices and we've just used fossil fuels. This creates additional waste. Much of this waste is toxic. None of it is good for the environment.

Even shipping electronic devices to stores and customers is a challenge. Equipment is transported by boat, plane, train, and truck. All of these require fuel. That fuel creates greenhouse gases that get trapped in the atmosphere. These gases contribute to global warming and climate change. Furthermore, electronic devices need sturdy packaging to survive shipping. Some of that packaging is made from recyclable materials, but not all of it is. The recyclable packaging isn't always discarded properly, either. This creates more trash in landfills where space is already limited.

Plug in your electronic devices. Now you're chewing through electricity. The devices also generate heat. They need cooling systems which require more power usage. Even when you decide your electronic device is no longer useful to you, it's still a problem. Few parts are made of materials that easily break down when thrown away. They release harmful metals and other toxins. Cities and towns have programs to recycle electronics, but it is difficult and expensive. Often, the process to recycle the parts results in waste that is still harmful to the planet.

Some efforts have been made to produce more efficient and long-lasting electronic devices. This prevents them from using as much energy. It also keeps them from having to be replaced as frequently. Reducing the need for such products, however, is a good idea. People must use and discard them more responsibly to keep the environment healthy.



IT'S UP TO US

Everyone agrees that electronic devices create problems for the environment. It takes a great deal of materials and energy to make phones, computers, and other devices. The waste they make is also harmful. About eighty-four percent of the world's population owns a smartphone. This shows how much we've come to depend on these devices. It is up to humans to take action so we may enjoy the benefits of electronics. We can have these products without putting the environment and ourselves in so much danger.

One way to reduce the negative effects is to research before buying electronic devices. Find products that are made in energy-efficient factories. Some companies also take steps to use greener materials when building their products. Devices made locally cut out some of the shipping fuel use. This makes them a cleaner choice. Knowing what you really need from an electronic device helps, too. You'll be buying something you will actually use.



Taking care of the electronic devices you buy is another good idea. The more years you can get out of a product, the better. It won't become trash too quickly. Advertising convinces people they need the latest version of an electronic device. This isn't true. These types of products work for many years if treated gently. Using a product for as long as possible decreases the demand for the product. That means fewer devices can be produced. Fewer devices equal fewer toxins getting into the environment.

Recycling electronics is a responsible activity, as well. Sometimes people throw electronic devices in the regular trash. The materials that are used in producing these devices don't break down in landfills. They also have chemicals in them that can affect air, land, and water. Take electronic devices to special recycling areas in your community instead. These areas are often located at recycling plants and are clearly marked. Sometimes cities and towns hold scheduled events that collect such devices. They make sure the devices get recycled correctly.

Another possibility is donating used electronics. You may no longer have a need for an electronic device, but someone else might be able to use it. There are many groups that accept donations of electronic devices. They find people who can't afford the newest products. These groups offer the opportunity to give another life to used electronics. This prevents more devices from becoming trash when they still work.

Although electronic devices threaten our environment, there are many things people can do to lower the risks. It would be very hard to go back to living in a world without these devices. We must think more carefully about how we use electronic devices if we want to keep them.



name: _____

date: _____

ARGUMENT ORGANIZER

TOPIC:

STANCE (PRO/CON/OTHER):

MAIN IDEA:

TALKING POINTS:

OPPOSING VIEWS:

<u>talking point #1:</u>	<u>specific evidence to support talking point #1:</u>	<u>opposing view #1:</u>

talking point #2:

specific evidence to support talking point #2:

opposing view #2:

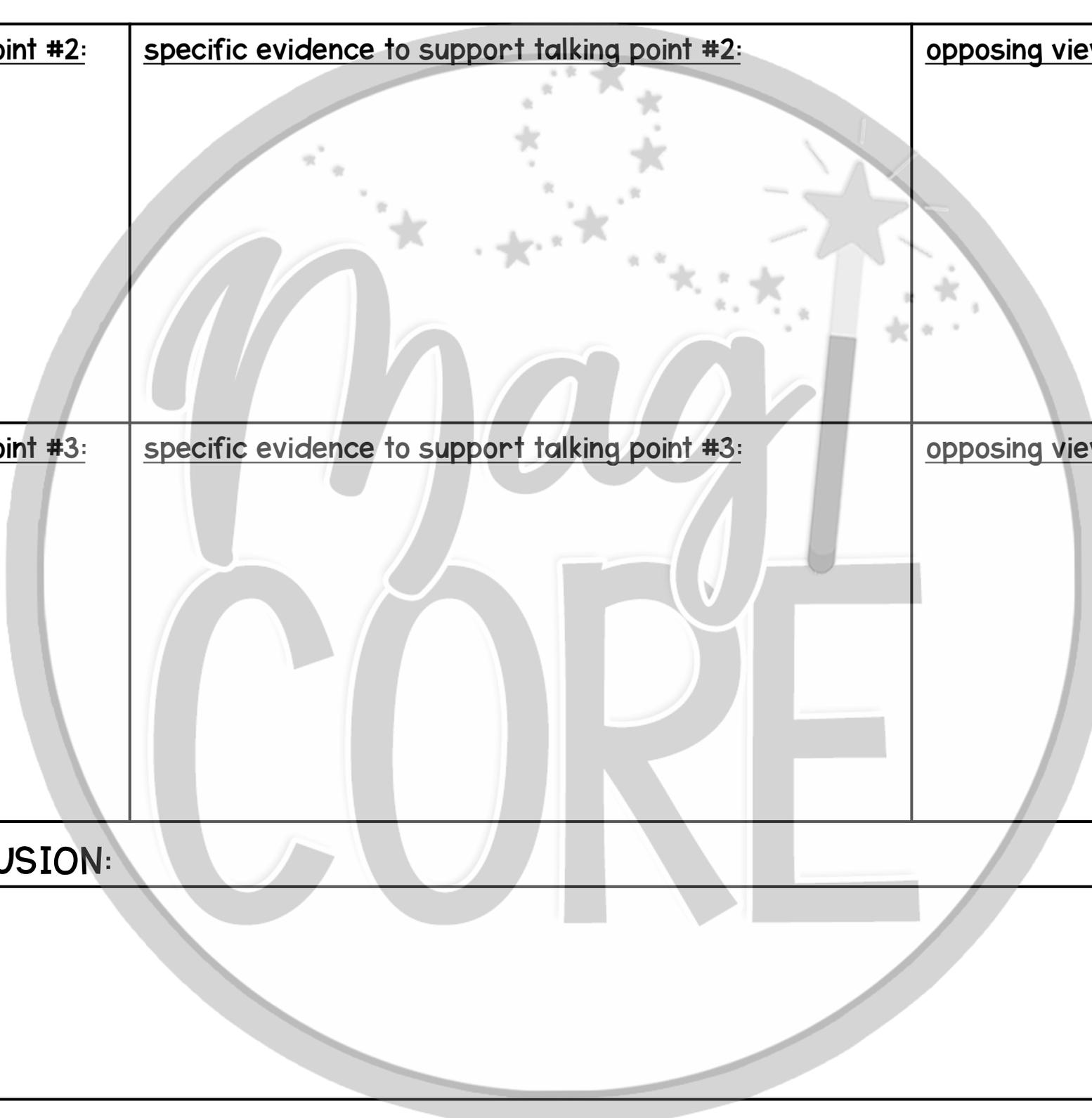
talking point #3:

specific evidence to support talking point #3:

opposing view #2:

CONCLUSION:

Blank area for writing the conclusion.



name: _____

date: _____

RESEARCH ORGANIZER

Topic:

--

Benefits or positive effects
of this specific topic:

Disadvantages or negative effects
of this specific topic:

--	--

Look for information from reliable sources. Gather evidence, not opinions.

REFLECTION

name: _____

date: _____

What was your opponent's point of view?
List at least two of their talking points.

What is one point they made that you disagreed with?

What is one point they made that encouraged you to rethink your own perspective?



Now that the debate is done, what is your personal opinion? How does it align with the argument you delivered?

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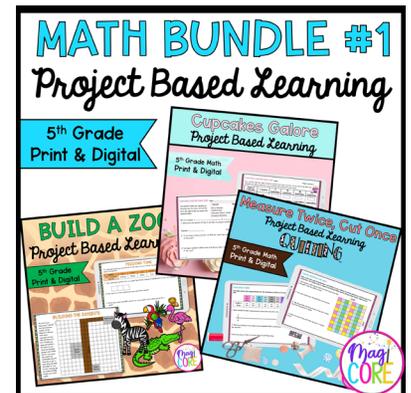
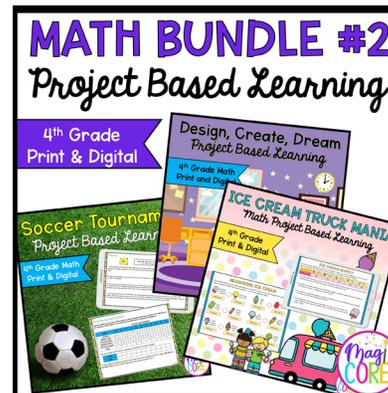
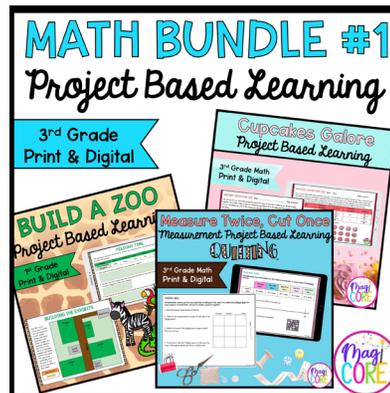
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