

Last session we looked at Survival Mindset and Shelter Building. This week we are going to look in more depth at:

Fire Safety & TeePee Fires

Young people can often be risk takers for a variety of reasons. Their age and stage of development means that they can be easily distracted, do not recognise danger, and may be more likely to take risks. It is important to have a responsible adult supervising at all times during this session.



Location: Your Garden or a Beach (below the tide line!)

What you need:

- Adult Supervision – ask them to join in too!
- Print the booklet OR use some scrap paper to draw and copy things.
- Camera or colouring pencils/pens/crayons
- Shelter building materials

Aim:

- Be able to risk assess the activity
- Show understanding of where to light a fire
- Build a TeePee fire outside.
- Work out appropriate size of wood to go on fire
- Know about the Fire Triangle

Activity

- Complete the Risk Assessment
- Build a fire pit
- Building a fire
- Fuel Find
- Light a fire

Fire Safety

Fire has a potential to cause injury and property damage. Before you choose a location and light a fire you should think about the risks and what you can do to reduce them. Here is a risk assessment relating to fire. See if you can think of any other risks to add:

Hazards	Who's at Risk	Control measures
Campfire Burns	You	You should be an appropriate distance from the fire Discuss dangers of and safety precautions to be adhered to around fire Restrict movement around the fire Take care that the fire does not become unmanageable Make sure there is cold water close by
Fire Spreading	You, Wildlife and Property	Ensure that the fire remains inside the fire pit Have a water source or sand close by to put fire out
Smoke inhalation	You	Sit up-wind of the smoke or below the smoke line. If you have respiratory problems i.e. Asthma, these should be monitored. Use dry wood to reduce smoke
Trip hazards	You	Tidy house policy Bags, coats, wood, cooking utensils etc should be kept off the floor where possible, away from the fire pit area You should be aware of trip hazards

Where to light your fire

Location – We are going to look at how to light a fire in a fire pit, this could be in your garden or on a beach. You could also use a heavy metal pan or purpose made fire stand. If you are lighting a fire on a beach it should be below the tide line and kept small to reduce the risk of it spreading.



Preparation

Before you even light a match, you must prepare your site for a fire properly.

It is always a good idea to check the weather forecast before you decide where to have your fire, wind direction is especially important!

Build Your Fire Pit



Make sure you build your fire at least 2metres/6feet away from anything that could catch fire, such as dead grass and overhanging tree branches or your mum's washing!

Create a ring of rocks, or bricks the size of your fists, around the fire area. To give an idea of size, we are going to aim for our fire base to be no bigger than a dinner plate this week, so the stone ring should be just a little bigger than this. These rocks should be spaced apart so that the air can circulate at the bottom of the fire.



Fire Triangle

A fire needs three things to work together to produce a flame. These are heat, fuel and oxygen. If one of these three is missing then you will not be able to produce a flame. If we understand this then it will help us problem solve when lighting and keeping a fire going.



Heat - This can be produced in many ways, such as friction, or sun light or electricity.

A simple exercise to see how friction can generate heat is to quickly rub your hands together, feel how hot your palms get.

You could also try to drill a stick on to another and feel if the end gets hot.

Fuel - This is what we need to keep the fire going, this could be wood, or gas, or a liquid, such as methylated spirits.

Wood is a common fuel, but it could be a chemical, such as the sulphur on the end of a match, that then lights the wood.

What other fuels can you think of?

Oxygen- this is what will feed the fire, it is in the air so if there isn't enough airflow around your fire it will go out. You can increase the oxygen around your fire by blowing or fanning the flames, the wind will do this too.

A key to any fire is Oxygen, too much and it can just blow out, too little and the fire will suffocate.

In your fire pit, why not try-

- Strike a match, hold the non-burning end in some pliers, explore how well the match burns if held upside down, on its side, or upright?
- Hold a magnifying glass in the sun and see if you can burn a hole in a page of a newspaper
- Take a small 9v Battery and hold the two terminals against some steel wool, this can light quickly so wear gloves for protection.

Gather Your Wood

With your fire pit all set up and our new understanding of what a fire needs to live, now is the time to search for wood to build your fire.

There are 3 types of wood you need to build a campfire:



Tinder – are small, flammable materials such as dry leaves, small twigs and dry grass. You could also use cotton wool and paper if it has been a bit damp out.

Kindling– This type of wood is one step up from the size of tinder. You'll want to gather a bunch of small twigs and branches the width of a pencil.

Fuelwood– look for branches that are about the width of your forearm. These larger pieces of wood will keep the fire going for longer periods of time.

Where do you actually get the wood you need?

Never cut branches from trees or bushes, even the dead ones. Birds and wildlife use dead branches for nests and other purposes.

Always collect the wood from the ground and collect only dry wood that snaps easily. If you are on a beach, search for drift wood along the tide line (just make sure it is dry!).

If the wood bends before breaking, it is too "green." If you use this type of wood for your fire, you'll get a lot of smoke, but very little flame.

Tinder and kindling burn much faster than you'd expect. A good rule of thumb is to gather twice as much wood as you need.

Lay & Light Your Fire

This week we are going to use the teepee method. We will use cotton wool for tinder, and lay our fire on a heavy metal tray placed on some rocks, to keep from burning the grass.



You start by placing your tinder in the middle of your fire bed. Then, build a teepee around the tinder wood using your kindling.

After the kindling is set, start to add smaller fuelwood around it in the same teepee shape.

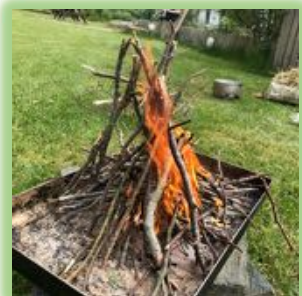


Now it is your turn, have a go

Light Your Fire

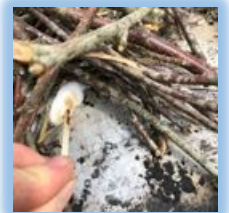
Now that you have your wooden structure up, it's time to light it.

I suggest you use a match to light your fire – it can be hard to reach tinder with a lighter.



You want to make sure to light the tinder in the centre of the structure as fast as possible.

After you light it, blow gently into the flame to fan it. This will help to get your fire going. Be careful not to blow it out though!



Remember your survival mindset from last week! Don't be disheartened if your fire doesn't catch the first time, or if it goes out. Begin the process again and Persevere!

Challenge

How many ways can you light a fire there is at least 5

1. Matches
- 2.
- 3.
- 4.
- 5.

Keep the Fire Going

You got your fire going? Great!

Now it's the time to keep adding to it and maintain it. When you add more wood be careful not to reach across the flame, hold the wood at one end and put that end at the bottom of the fire with the other end pointed up to the middle.

Keep adding wood to it as time goes by, but slowly! If you add too much wood at the time, you run the risk of smothering your fire and putting it out or your fire getting out of control.

Don't worry if the teepee shape collapses, when you add new wood, just keep putting it on so one end points up to the middle of the fire.

Draw or take a picture of your fire



When you are finished with your fire, allow it to burn out, or douse it with sand or water (be careful not to get burnt by the steam that will come up!). Just remember it may look like it is out, but still be hot, and if you used a tray or pan to contain your fire this will also retain the heat.

Stay safe, respect the environment, and have fun building your fire.

Next week we'll be learning more about:

Foraging, Water Collection & Cooking