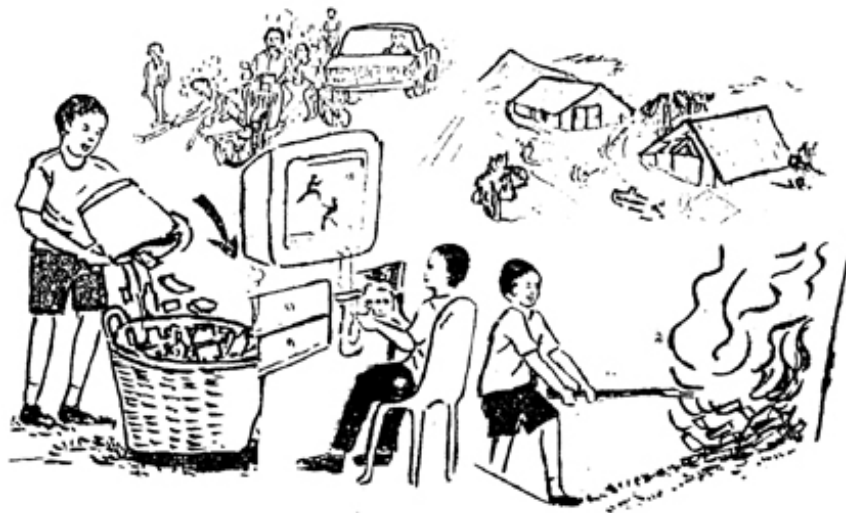


Textbook

Disaster Reduction

For

Grade 5



Ministry of education
Institute of national sciences and education
(With the cooperation of national disaster preparedness center)
Supported by DANIDA, ADPC

2003

Textbook of Disaster reduction

Elementary school Grade 5

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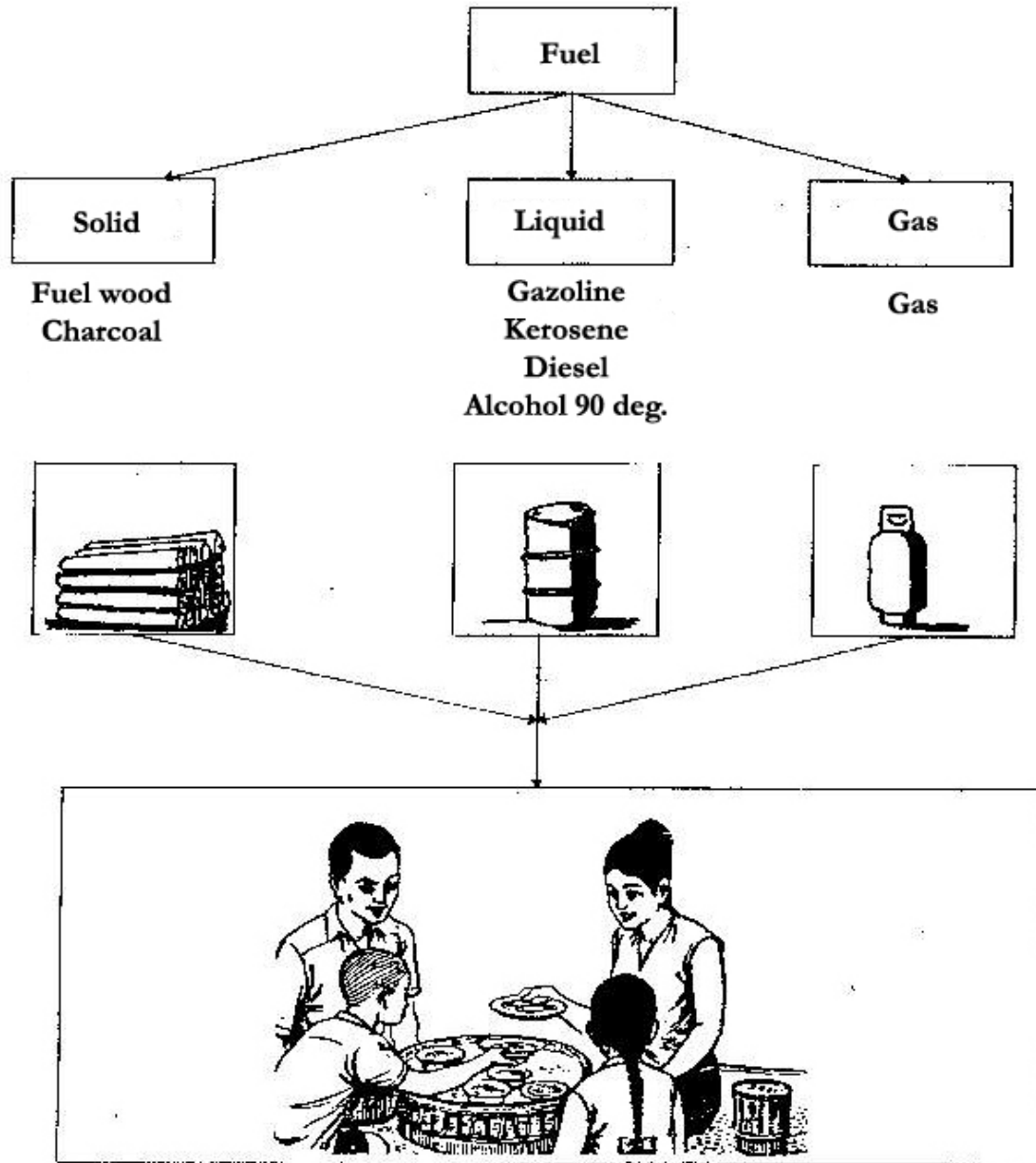
2003

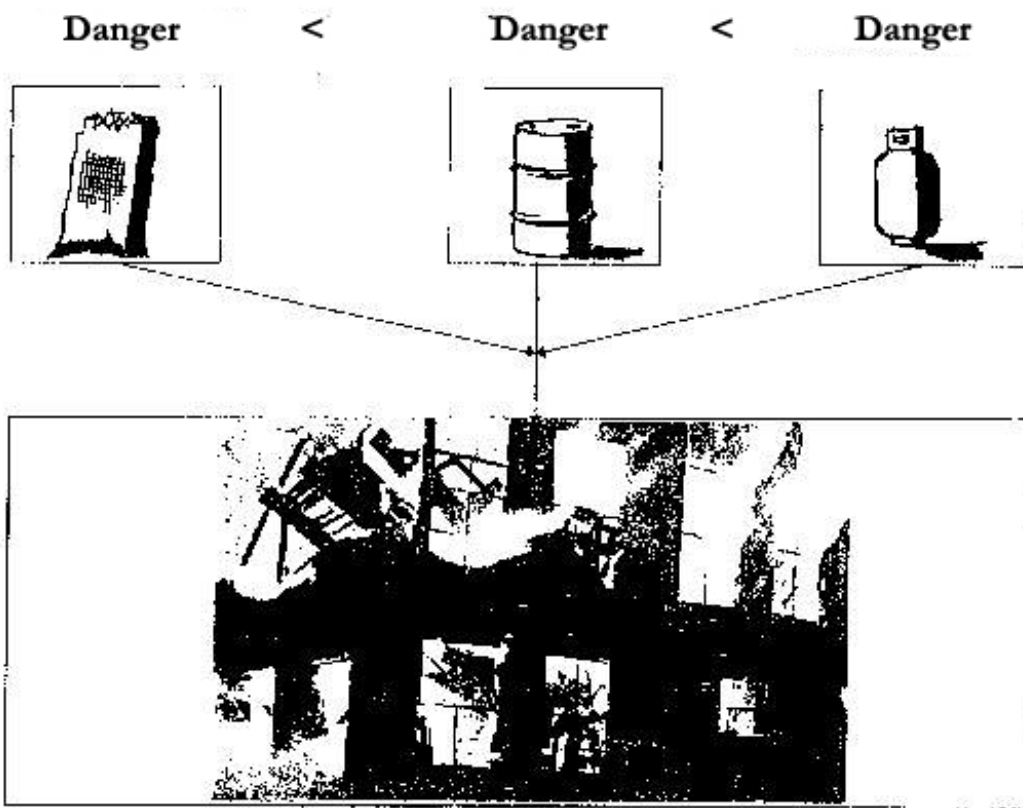
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Lesson 1 Fuel

Fuel is combustible material. There are three fuel types available in daily life, solid, liquid and gas types

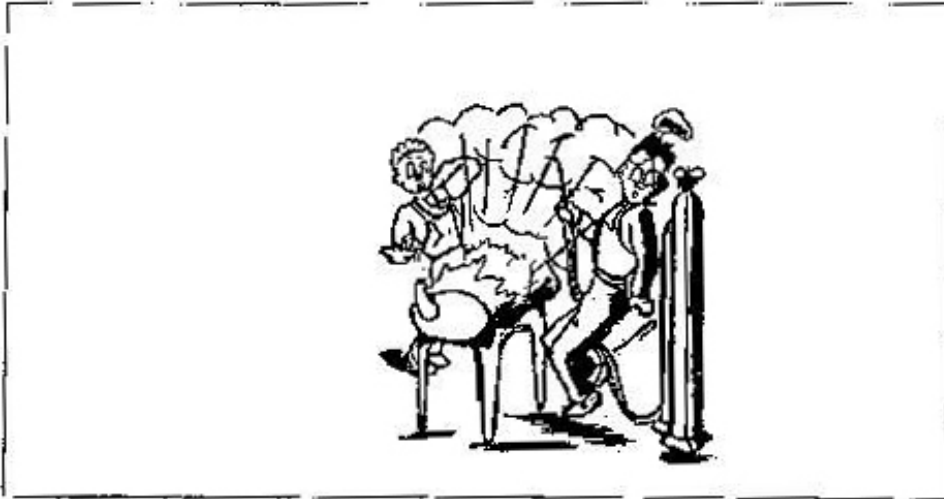




All fuel types lead to fire accident due to careless of fire users

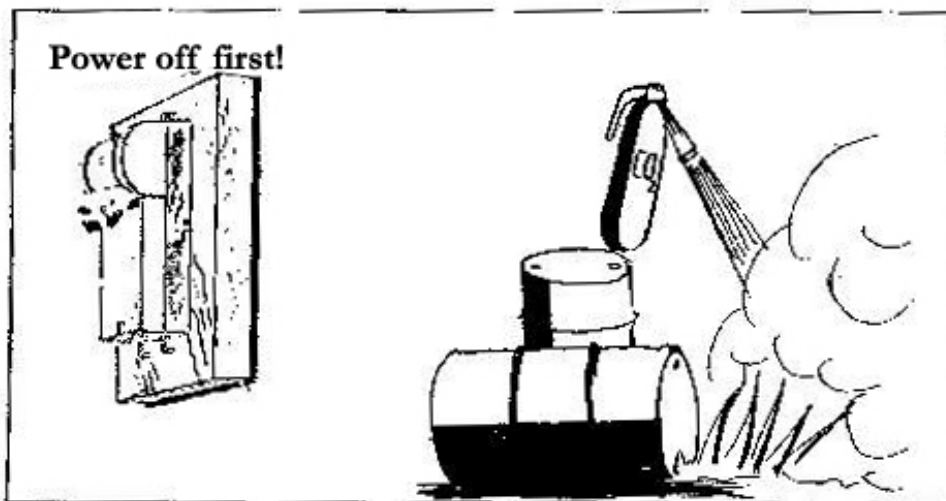


Fire accident can be occurred due to:

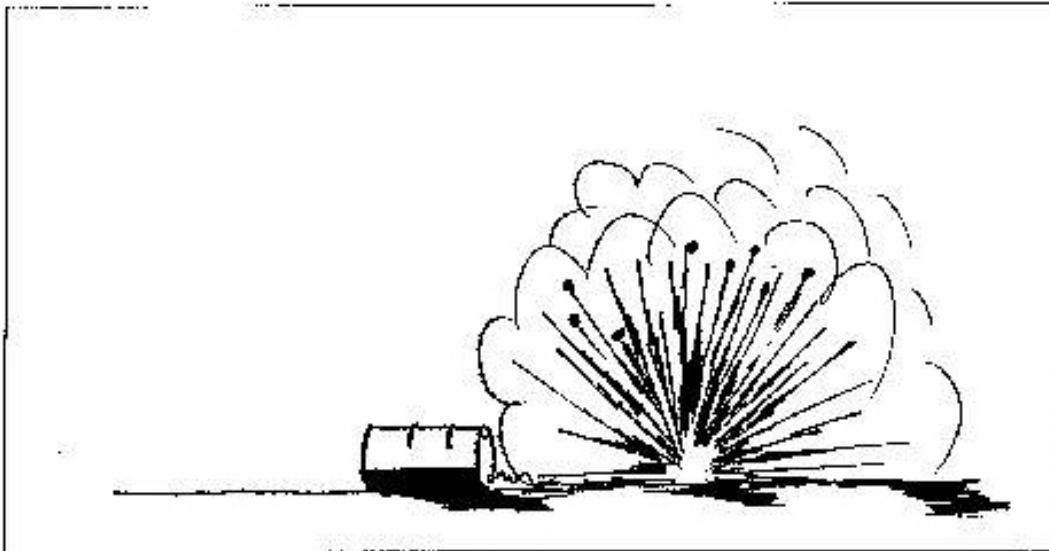


Fire accident cases that occurred in workshop, factory, sawmill...

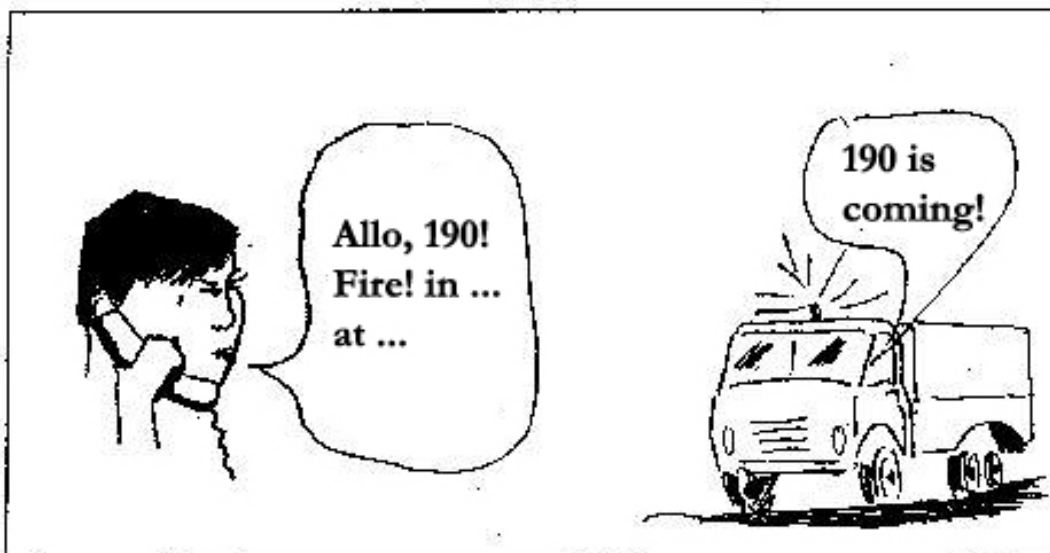
Before fire extinguishing, electric power should be off



If fire accident is occurred, burning liquid fuel get into flames, we should escape from it, because it can explode and fast flaming

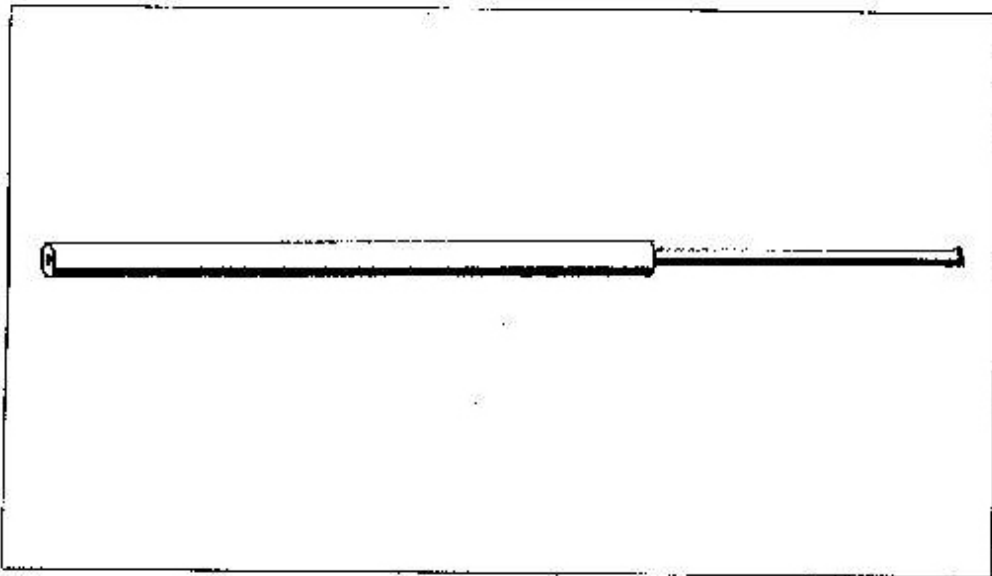


When the fire get into wide area, dont forget to call 190 immediately.



For fire accident prevention: should keep solid fuel far from fireplace or fire stove. Should firmly close solid fuel container, and keep in dry place far from fireplace location.

We could make a extinguish instrument for prevent from solid fuel burning such as wood or charcoal.



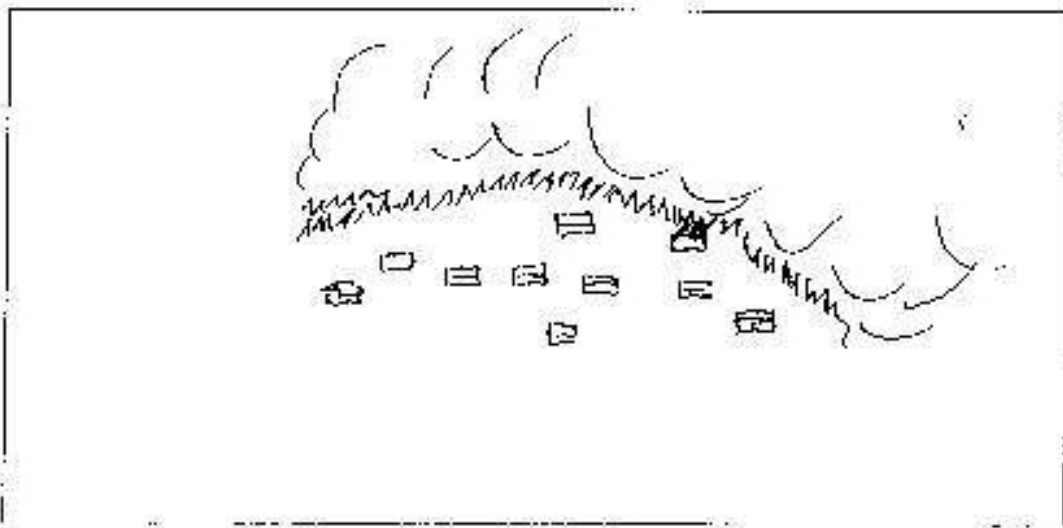
Forest fire – how the forest is burned?

Actually, “Forest” means an area, which is full of green and dense types various vegetation. Green trees or vegetation mean all alive trees, in which water is inside its trunk, branches and leaves. Whatever type of vegetation is, when the fall autumn is coming, its leaves will dry and fall to the ground. After many years and many times that these leaves were fallen down, more dry leaves are covering the ground. These dry leaves are good combustible and ready to be burned. If there is a fire sparkling, fire will come up and start to burn, the fire will become flames. The flames will warm up the trees in the surrounding area. All the alive trees become hot that its leaves became dry at its branches, which lead to fire burning of the branches. The same thing will happen to the leaves and branches of the other trees. Finally, the fire burning occupied larger and larger area continuously. Therefore, when fire burn the leaves and branches on trees it will also burn the dry leaves on the ground, that is very difficult to stop it

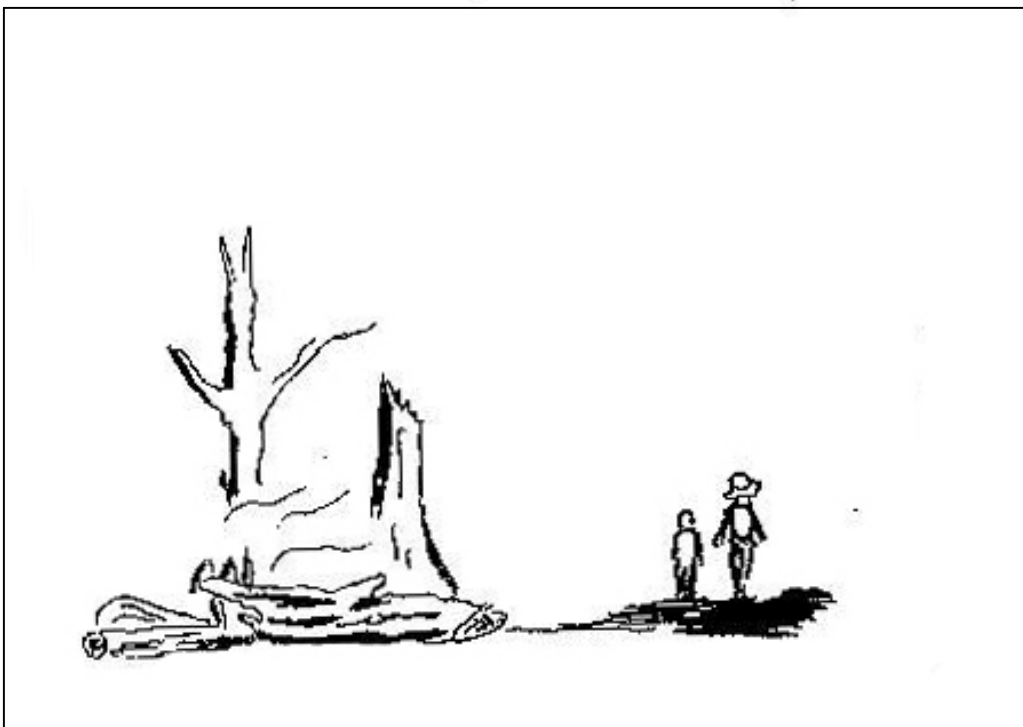


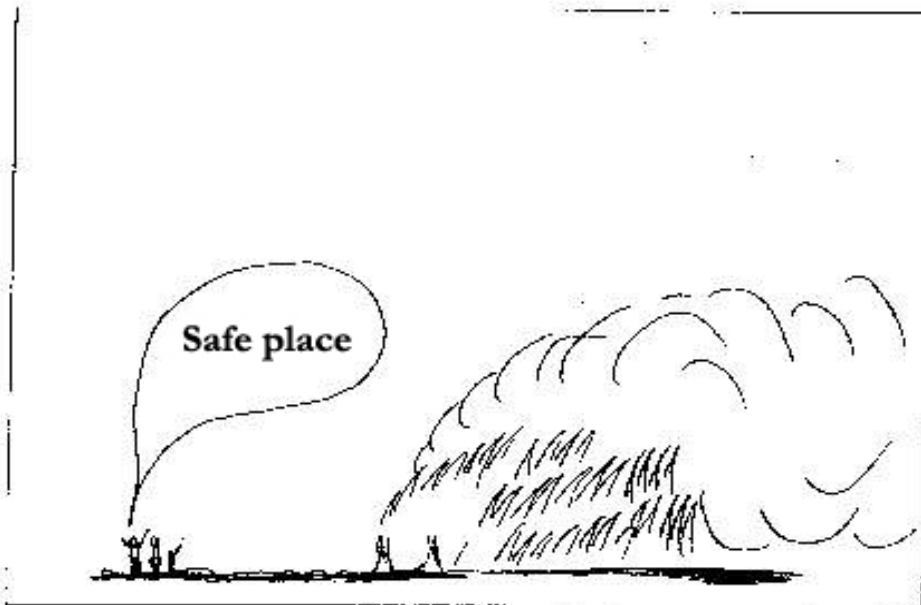
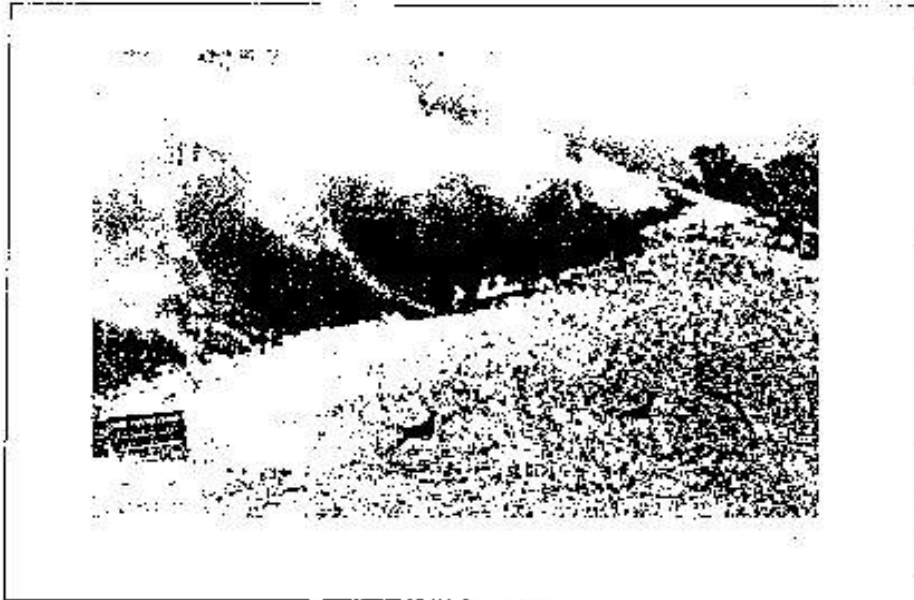
If there is big settlement near forest, once the forest fire is happening, these are very risky. Sometimes, forest is burning in large are, the fire may burn also villages, all houses, schools and etc.

In this case, it will be very difficult to survive, because all the houses and residences are burning. No place for living, no school for children, no hospital for patients. Not only villagers will be trouble, the neighboring villagers as well as the society will also face difficulties and troubles, because they have to help and support the fire victims.

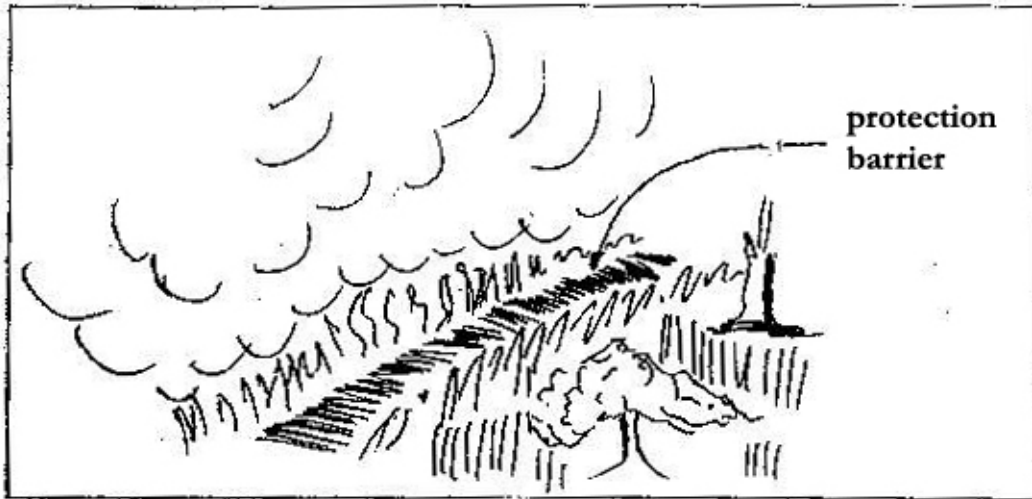


In most cases, forest fire accident occurred due to man-made actions





Fire extinguishing



Fire prevention measures

Everyone should have attention and responsible on self activities:

Pre-burning something should be concern the consequent impacts

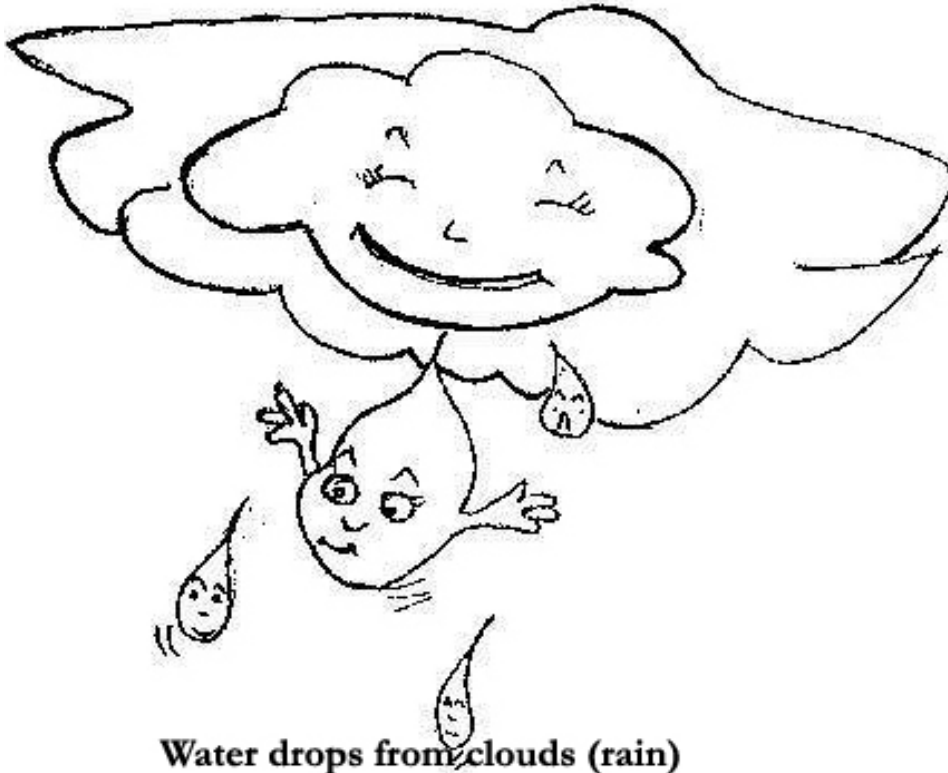
Self-burning should be concern to advantage and disadvantage to society.

Lesson 2 Flood

1. Cause, characteristic and lost from flood

Story: Crying River

I am a small water drop; I was fallen down from sky; everyone calls me “Rain”. My mother is a cloud, which can fly through the wide sky. When the sun shines to the earth, water on the earth was evaporated and then grouped together to be “my mother”. She travels in the air, following the wind direction. When my mother has met cool air, she has given birth to me, to fall down to the earth.



In previous year; I was born and fallen through cool air, and then I meet a diversity of forest. I was fallen down to green leaves, flew on the tree surfaces and then down to the soil, then I got together with my friends to become a river. Some of my part went to the soil to provide soil moisture and offered the nutrition to all life. I was a provider of happiness to all life.



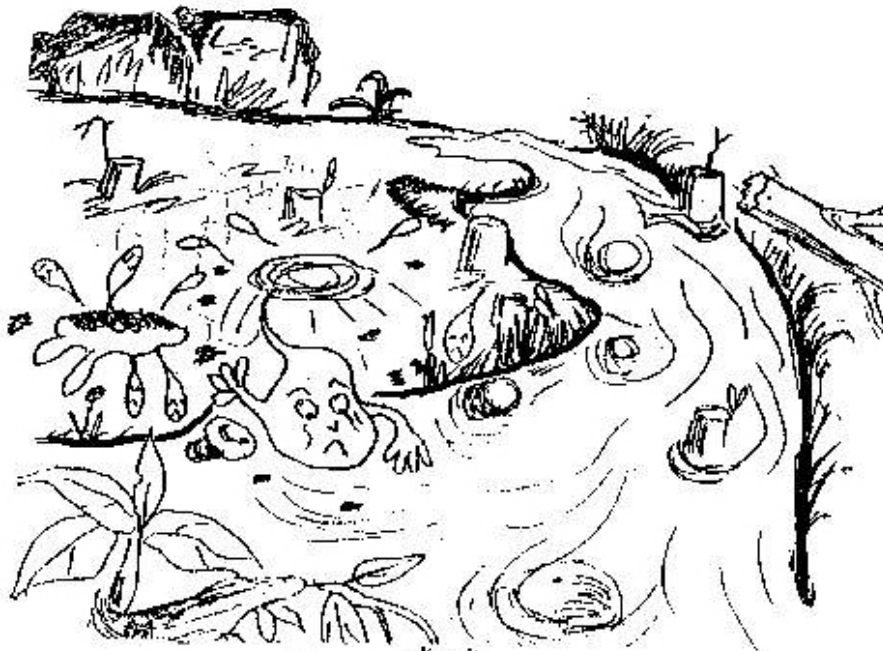
**Water drops falling to vegetation and
flow to form a river**

But, at present day, when I was born, I have met something that has been changed. Hot weather and smoke covered everywhere. My mother always complains: she cannot give birth to me easily during the rainy season. The forest, which used to give freshness, has changed to empty space and drought.



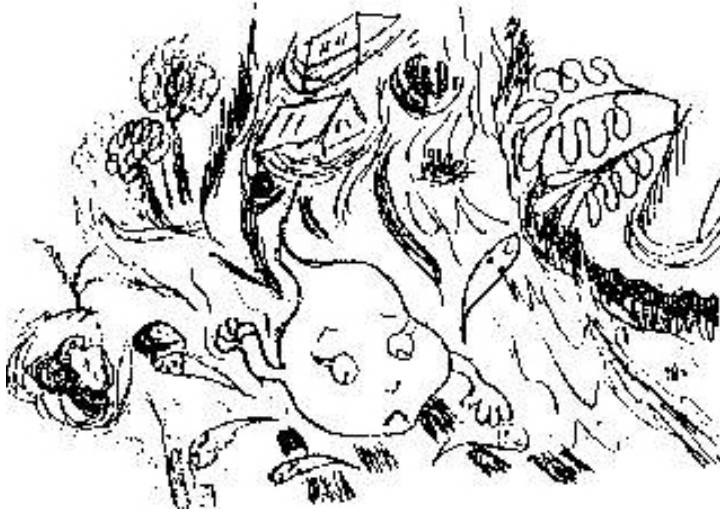
Desforestation causes pollution

When I was fallen down from sky; there were no leave to greet me at all. Me with my friends was in hurry to fall down directly to the soil with physical and mental harm. The soil was divided into small pieces. I brought the soil with me. I lost my coolness in my body. We became dirt red-brown color.



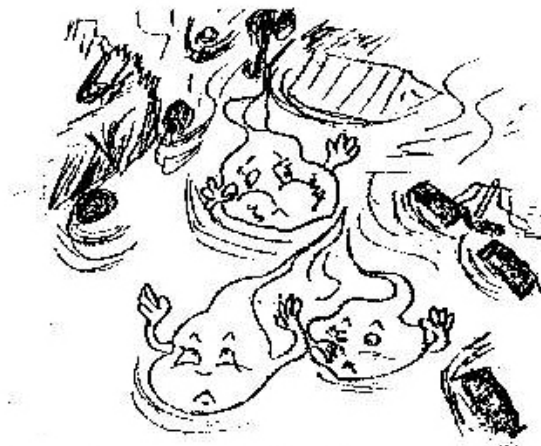
Water drops falling to dry soil

Because of no place to take rest, and nobody greeted us, we were in hurry to flow and flood various places. We got both physical and mental pains that we brought damage to human, animals and properties.



Water drops and his friends are flowing and flowing down

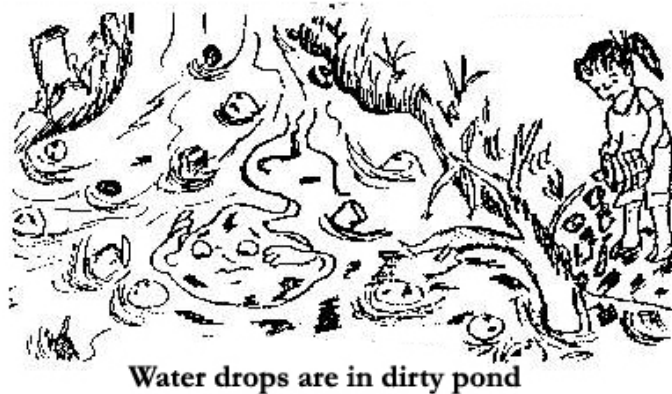
Along the ways, (rivers, drainages and canals) we traveled with difficulties; just because of disturbed garbage, plastic bags and dense house settlement. We did not have any way to go; we were pressed to each other, so we were so crowded and slowly discharged. When we traveled to the low area without dikes and trees; we were overfull and flooded to various places for a long time.



Water drops are flooding and flooding

I could not tell to any life and things to evacuate from my flowing way. My rapid and strong flow has damaged human and animal life. I spoiled cash

crop, damaged road, hospital, school, which cost high value, including the other properties. Some other insects have flow also with me such as scorpion, centipede, venomous snake, etc. In my body, I still have other thing that you are not able to see, which are can kill human and animals: poison contaminated, waste of human and vegetation corpses, which are the epidemic sources: dysentery, diarrhea, rash etc. we still are the breeding conditions for different types of mosquitoes. These mosquitoes could bring death to human by dengue.



The overfull conditions that we created, has lead to the causes of no residence, no way to survive, shortage of food and clean drinking water for consumption, lost of works, exacerbate to famine, indebt increasing, development and investment were blocked off.



I just cried and asked myself: do I am the one who brought poverty to human? Do I am the one who brought toxic substances and epidemic to all lives? Where is all of the freshness of the nature that made happiness to all lives? Who has destroyed my natural being? I was crying and my tears were dropped down, who ever please help me, please...

2. Participation in the reduction of the damage from flooding

a. In pre-flooding period

May is coming
Clouds are moving
Listening to thunder
Give warning

rain is falling
one after another
noisy sky
the rain is coming

Be hurry
Making high dike
Save our home
Putting in
Food and water
Medicine also
Moving every thing

get to be safe
canals and water ways
safe our belonging
higher places
are important
should be prepare
and be ready



Preparing for flooding

b. In flooding periods

Water increasing
 Flooding is coming
 All animal
 And garden and orchard

flowing and flowing
 up to my house' roof
 were flowing away
 also paddy fields

Water flowing
 Feeling so said
 There is no way

and flowing away
 roads were damage
 to get to each other

Every day
 Want to tell
 Wherever to go

only by boats
 to warn all the young
 please be careful

Don't just only
 If don't be careful
 Cannot get up
 Try to avoid

playing in water
 falling to a hole
 only sinking
 having dirty food coming by flooding

If will make us
You will shout

having painful at stomach
and lying down

Don't know what to drink
Which is only
All are dirty
All are dangerous
We have to think

but just drink
dirty water
don't touch it
it will hurt you
and be always in mind



Evacuation from flooding area

c. Flooding has been reduced

Flooding has been dry
Let start cleaning
Don't let it remain
Clean up all

getting less and less
our houses
the dirt on our houses
no dirt remains

Also have to find
To replace what is lost
Try to find nice ones
For all of us

some thing for planting
by the flooding
for re-plating
be out off crisis

Planting vegetable
Preparing to re-plant
To make it to be
All the fruits and vegetables

and fruits
on the damaged orchard
all green
are our food

In the other hand
Such as buffalo, cow pig
Make it to be good
This life experience

we should have livestock
all kind of poultry
for exchanging
is getting better.



Repairing of damaged locations

Lesson 3 Drought

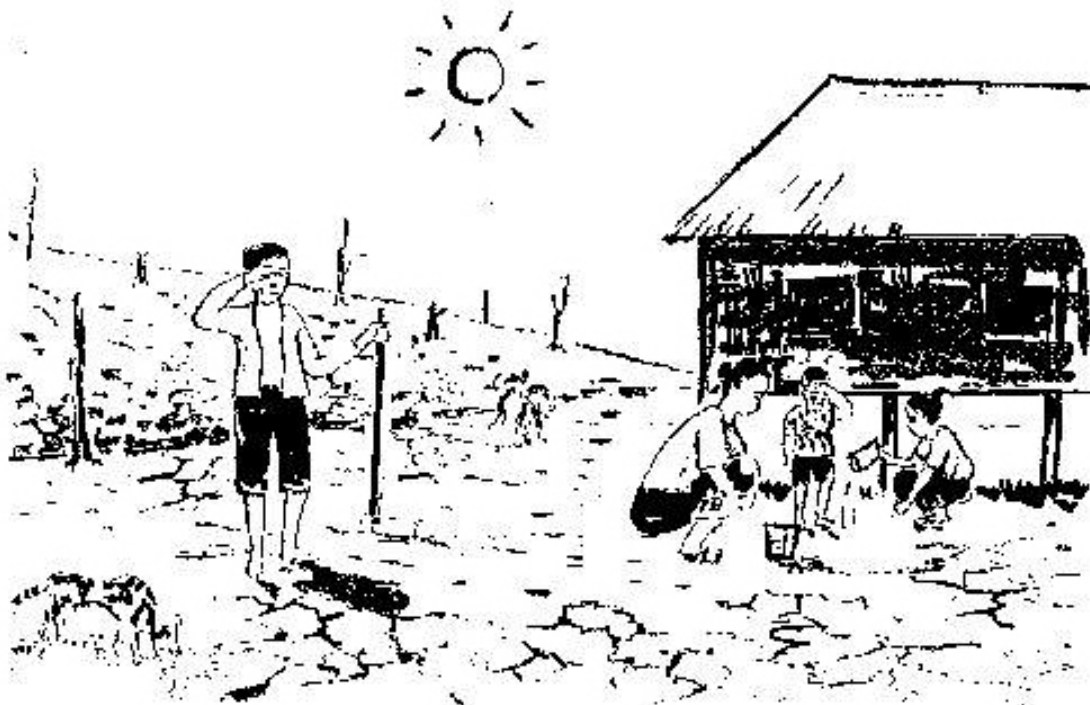
A. Drought disaster:

Drought disaster occurred because of limited or less rainfall for a long period, which is affected to all everything in daily life.

Drought disaster is a danger to all lives, where ever drought disaster is happened, it will affect to human life: shortage food and water, lead to war for occupying more water resources.

Drought occurred because of unseasonable rainy season, so the soil lacks of humidity or moisture and cannot hold or keep the water. Also another cause is because of the member of population has been increased, more forest have been cut and destroyed, more plantations were developed, more shifting cultivations which lead t the climate change (hot weather ad no rainfall)

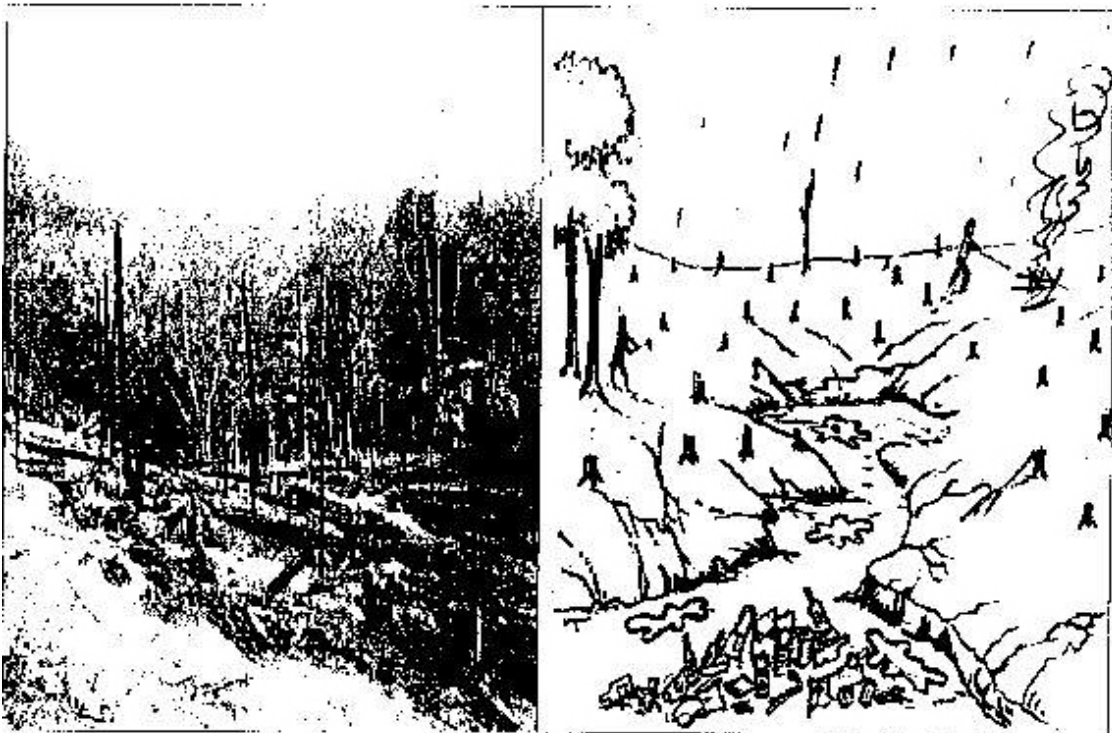
If lees rain in rainy season, then in dry season water will be less, therefore drought is temporary water drying or less humidity than usual



This figure shows drought

B. Causes of drought

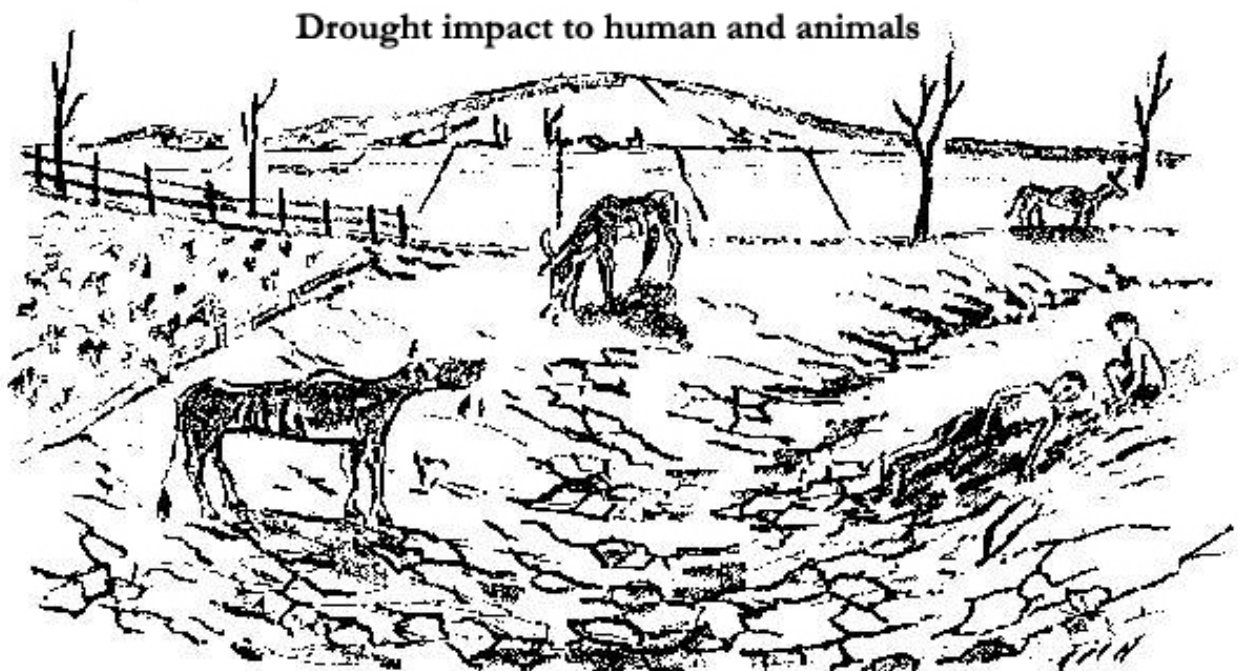
- Long period of unseasoned rainfall
- Environment and natural resources have been destroyed: degraded forest, soil cannot keep moisture.
- Water consumption or use, misuse or water resource such as: overuse natural water resources, natural canal, lake, pond etc
- Weather conditions changes (weather become hot)
- Global temperature changes



Degraded forest

C. Impacts of drought

- Living conditions are in difficulties. Difficult to find water in the area of drought
- Epidemic spreading
- Forest, vegetation and cultivation are drying, reducing and dying, which lead to shortage food for human and animals
- When water resource have been reduced, people living near drought area are the seriously affected victims
- Lost of life and properties

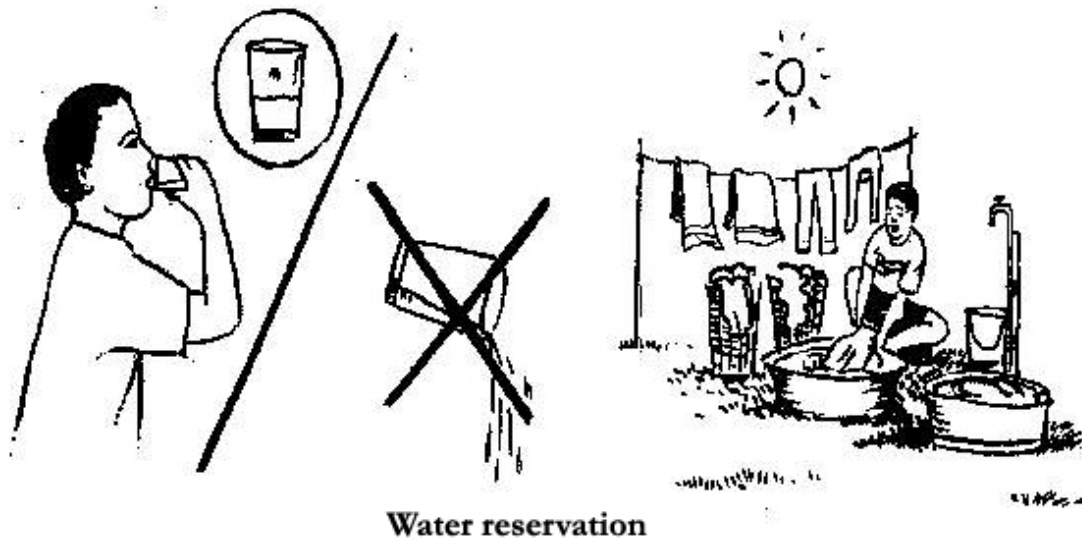


D. Impact reduction from drought disaster

The impact of drought can be reduced as following:

D.1 Before drought

- Reduce misuse of water or water use mismanagement
 - Do not washing car without care of water use control
 - Carefully use water in cooking
- Prepare water containers and well close it
- Keep clean all natural water resource (lake, pound, rivers)
- Check up fro grass field to feed livestock in dry season
- Keep following weather forecasting news from the meteorological department



D.2 In drought period:

In drought period the following instructions can be observed

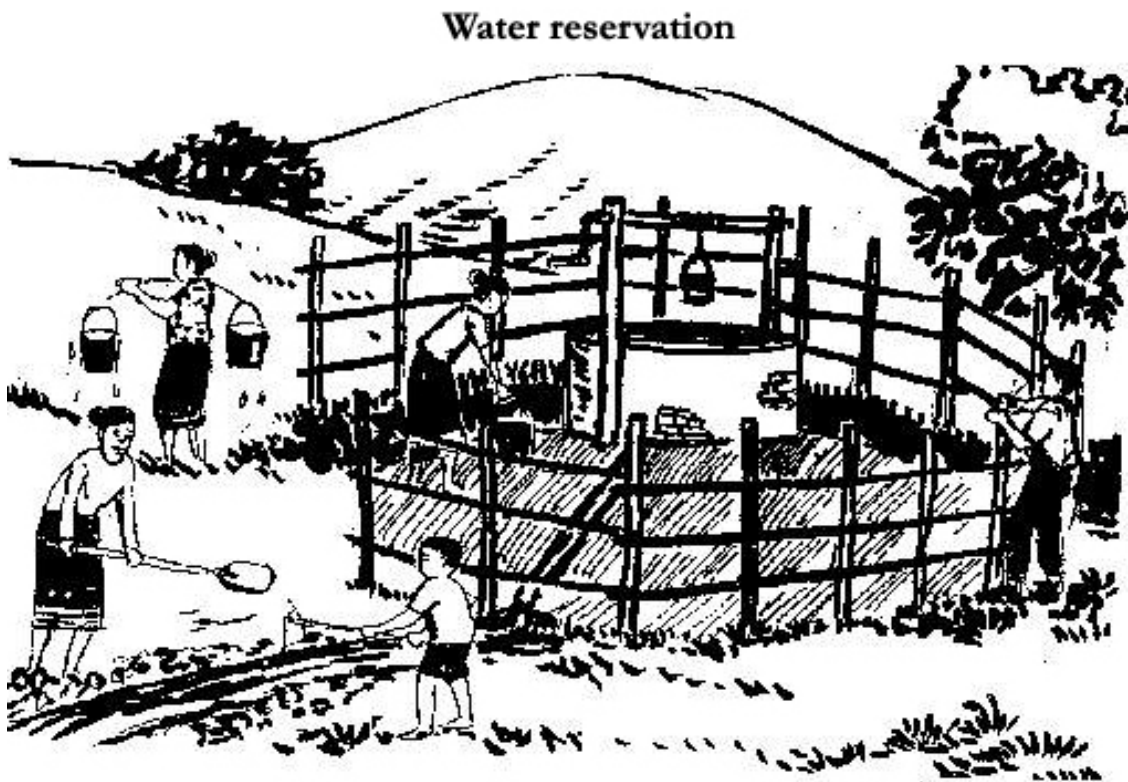
- Use water only for necessary needs. Following the instructions from radio and TV regarding the preparedness to weather change
- Check up and keep clean all water storage in residential area.



Water relevation

D.3 After drought period

- Once drought has passed, we should repair water storage and resource, clean it up
- Digging deep wells, check for the water underground flowing system
- Build up the natural water pumping to be corresponding with the underground water flowing system.
- Re-planting of vegetation and renovation of livestock
- Planting trees to be forest for reserving the freshness of environment and reserving water resources for long time

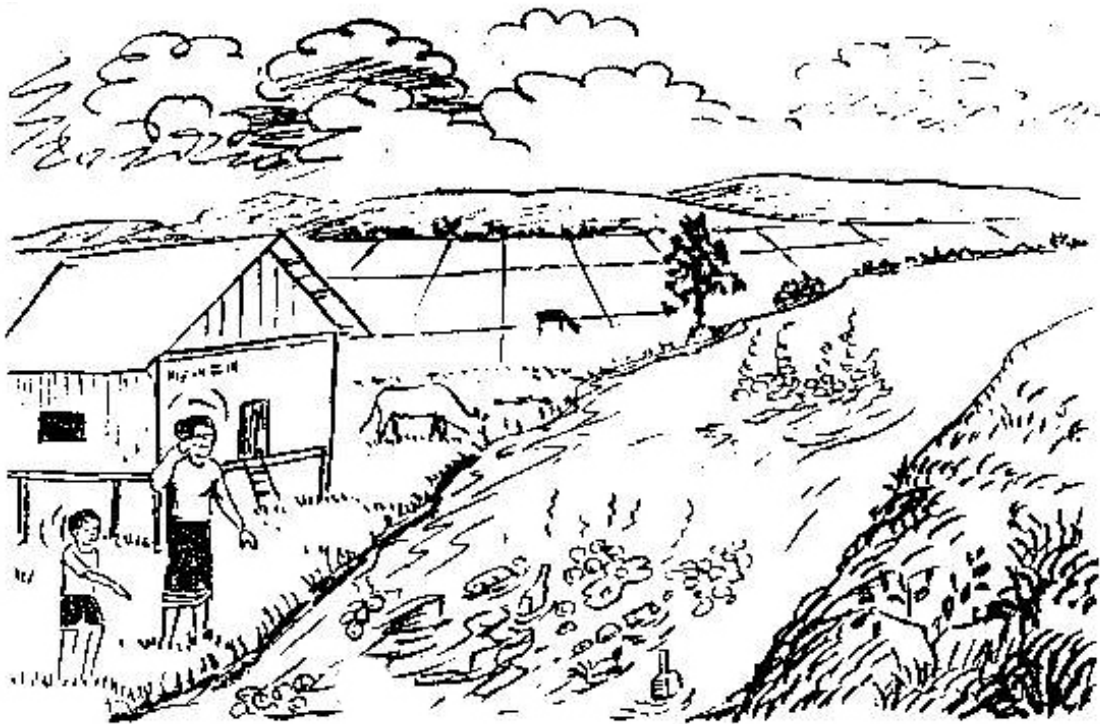


Lesson 4 Pollution

Pollution is gas, smell, and smoke that negatively affect to human health, animals, vegetation and environment. There are three main pollutions: water, air and noise pollution

1. Water pollution

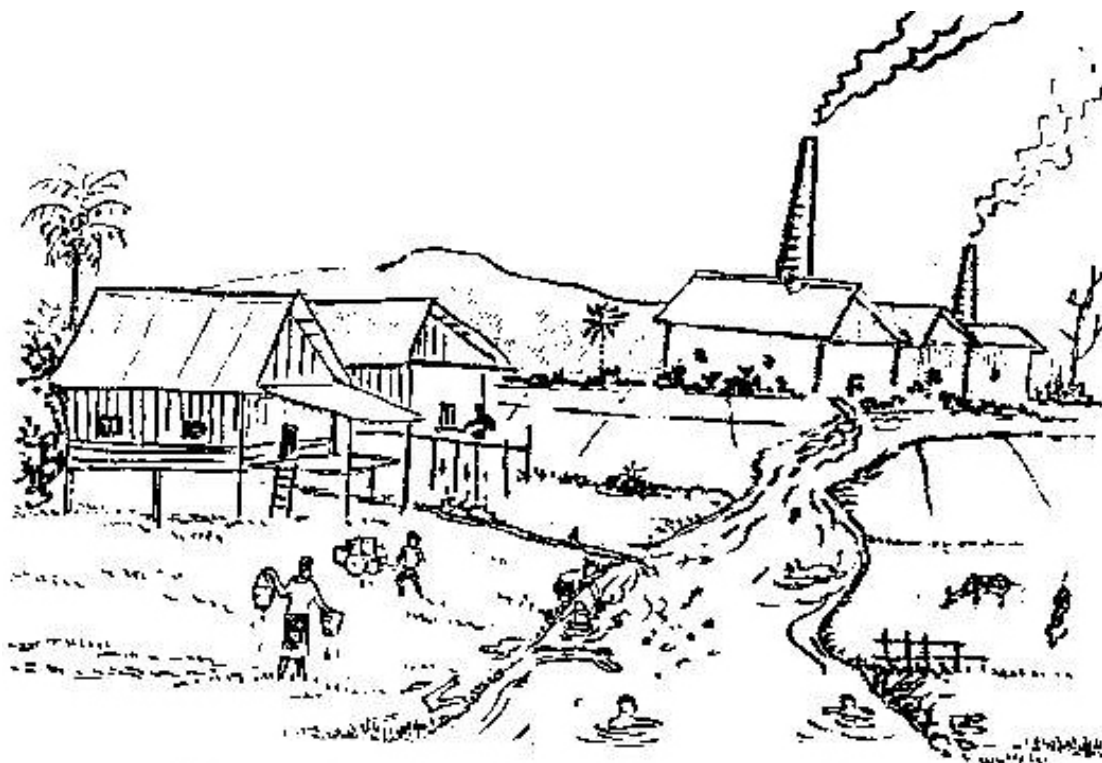
Water pollution means water with degraded quality or water with composition change: spoilt water, poisonous water, disease infected water, water with turbidity, water with radioactive and chemical substances, including also oil spills.



Water full of dirt substances floating on the surface

2. Causes of water pollution

Water is useful for several purposes in our daily life. Water pollution is just because of no responsibility of water users that released dirty wastewater from households and factories to natural water resources (river, pond, lake, etc.) without water cleaning and filtering. Apart of that, garbage, food waste, corpses, death bodies of animals and plants should not be threw to the water resources.

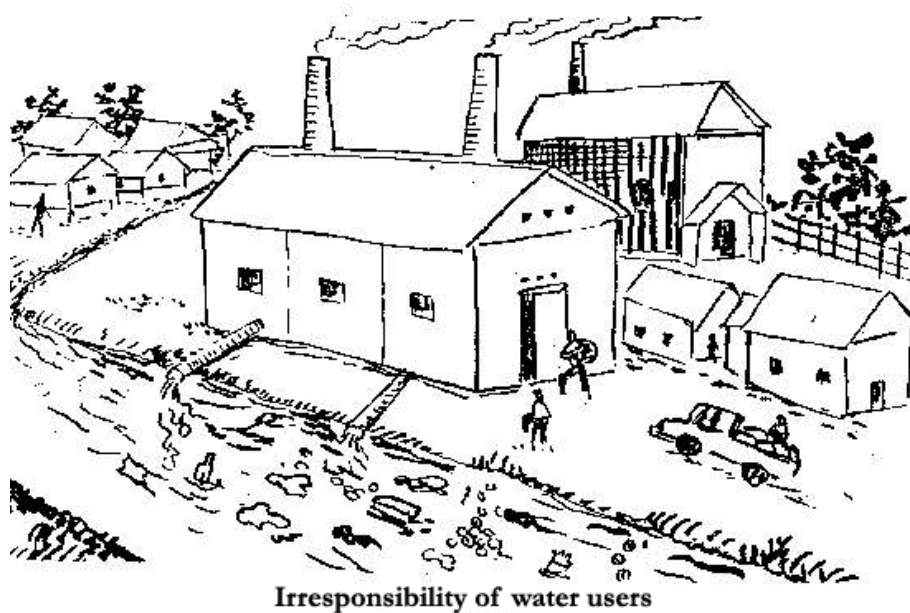


Houses, factories release dirty water to river

3. Impact from water pollution to environment

The following are the impact of water pollution to environment:

- Aquatic animals dying
- Sources of various diseases
- Bad smell air, degraded quality of soil
- Annoyance to human breathing system
- Not able to use water for drinking, bathing, laundry and cultivation.



4. The water resources quality reservation

To reserve water quality for being clean, safe and free from pollution, what we have to do is:

- Do not dump garbage and dirt to rivers, ponds and lakes
- Reduce the use of chemical substances and pesticides in agriculture, because it would be flew to the water
- Each house should have proper toilet, water system, water pumping system, which are clean and safe for use.
- Each house should have wastebaskets and separate garbage types into different baskets for self-sanitary and city garbage collector can arrange it easily.

The garbage that should be separated are:

- a. Organic garbage: food waste, vegetable waste
- b. Combustible garbage: paper, vegetation leaves, pieces of fabrics
- c. Incombustible garbage: glass, metal, plastic bags
- d. Dangerous garbage: used materials from hospitals: chemical substances, cotton buds, syringes, etc.

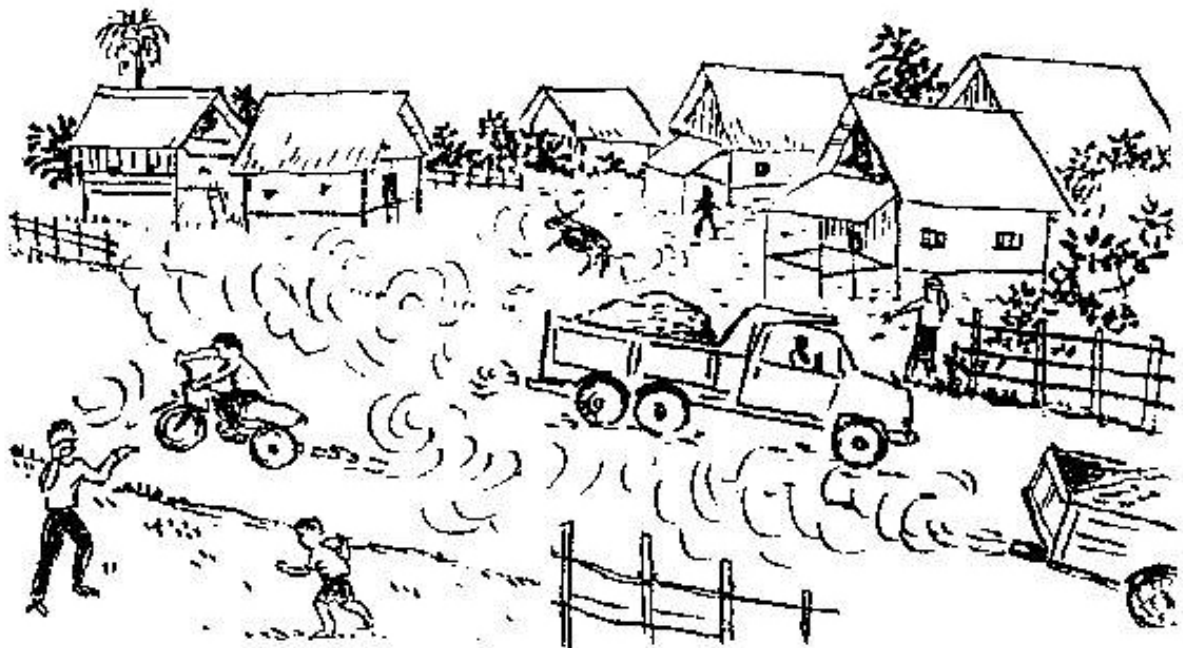
Among the garbage listed above, some of them can be reused: paper, glass, cans and plastic stuffs.

II. Air pollution

Air pollution means the dirty air, poisonous air or air that full of dust, smell, fog, smoke, poisonous gas, radioactive or chemical substances.

1. The causes of air pollution

Air is the natural resources, which is circulated always in the nature, so it has no limit in amount. Anyway, the factors that cause air pollution, poisoned air are the waste releasing from the irresponsible activities by the users, such as: waste throwing, waste burning, smoke from the factories, and the poisonous gas from the machines, engines or vehicles.



Smoke from vehicles and dust

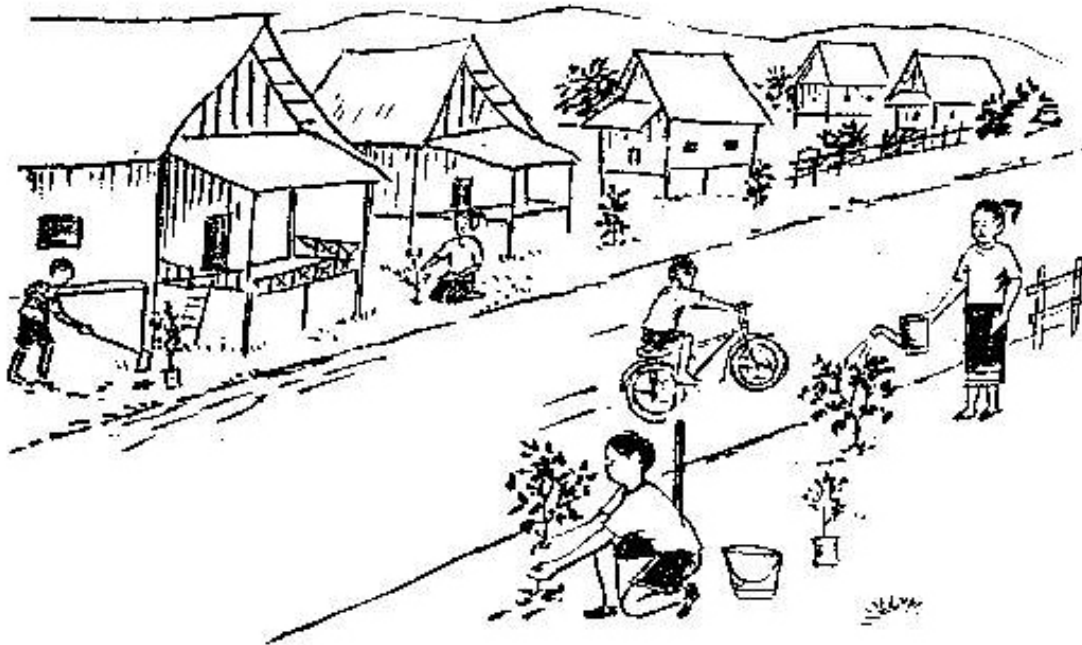
2. The danger of the air pollution

Air pollution is dangerous to the human and animal health. It made people sick, especially it directly affects to the breathing system such as nasal sinusitis, pneumonia and nervous system malfunctioning.

1. Air Quality Reservation

To prevent from air pollution problems, we should do the follow:

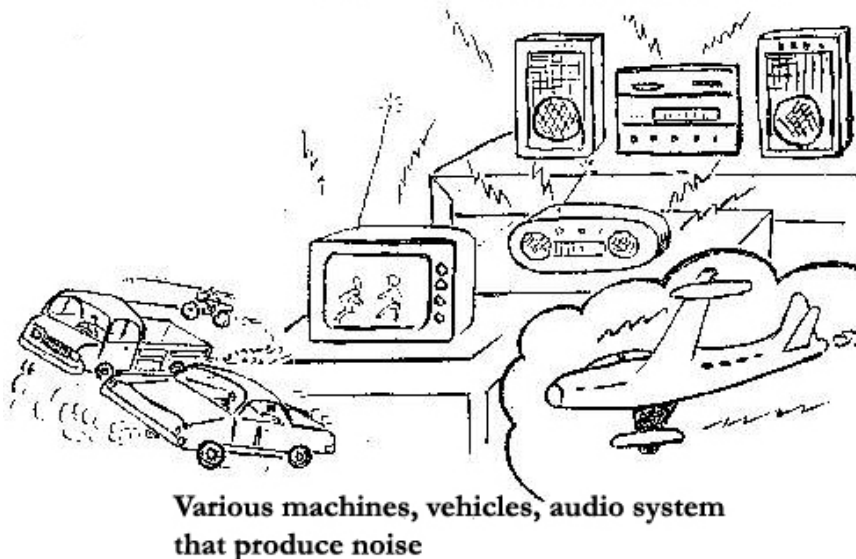
- Do not throw garbage and burn waste in the residential areas.
- Car users should always check up the car engines
- All factories should set up the measures to reduce smoke and dust that will not be released to the residential and working areas.
- Construction and destruction sites in the city should set the anti-dust nets.
- Trees and vegetation should be planted among the houses, building, in the empty space and along the road sides, because the trees can help filtering polluted air to be clean air.



Tree planting near houses and roadsides

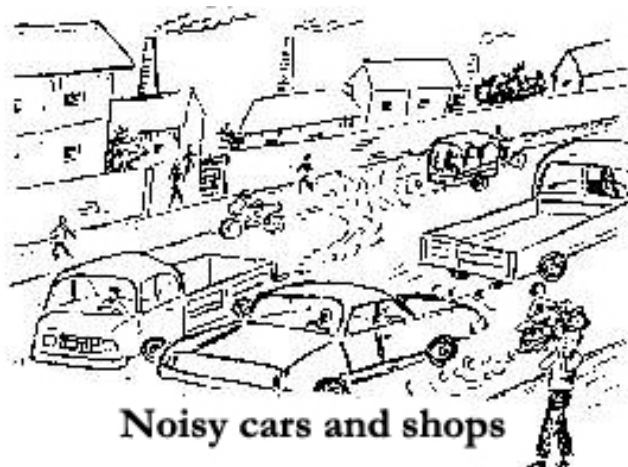
III. Noise pollution

Noise pollution means the sounds from the engines, machines, stereo systems and others, which are in extremely high volume.



1. The factors that cause noise pollution

The factors that cause noise pollution are just because of the misuse of engines and sound systems, which have extremely high volume, such as: the noise from the factories, industries, vehicles, and sound systems.



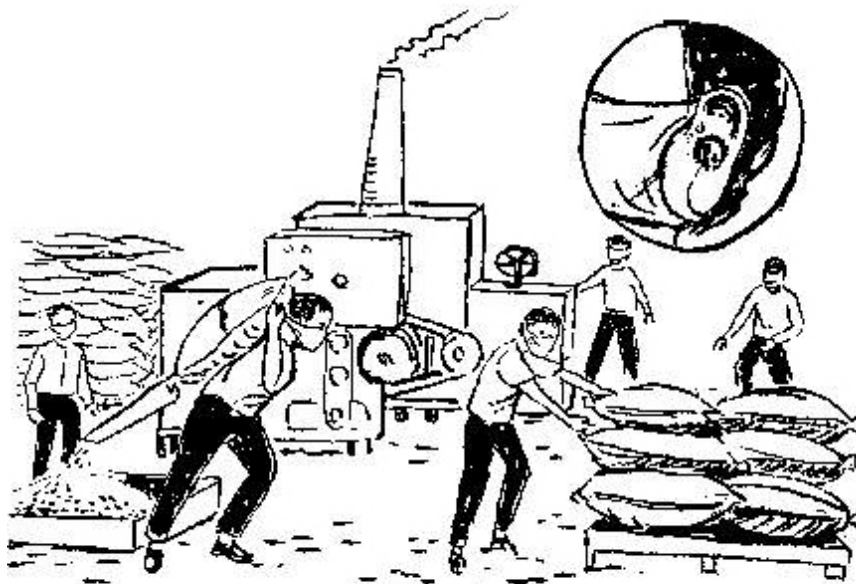
2. Danger from Noise Pollution

Noise can be considered as energy from vibration. Therefore, if the noise intensity is high, it would affect to human ears causes ears malfunctioning, deaf and stress.

3. Noise Pollution Reduction

To reduce noise pollution we have to do as follow:

- It is necessary to install noise-reduction facilities to the smoke tube of the machinery in factories. The workers also should have the ear-protection on their ears.
- It is necessary to install noise-reduction facilities to various vehicles that will not produce high intensity of noise on the roads.
- Do not use car siren if not necessary, which is annoyance.
- Turning on the CD player, Radio, TV, Tape player on the only appropriated volume, which can be heard only within our own residence.



Workers in noisy factory using ear-protectors from noise

Lesson 5 Road traffic accident

1. Types and characteristic of traffic signs

Traffic sign is a sign that indicates by road traffic rules; it beneficial to safe and discipline traveling and it can be avoided from road traffic accident.

1.1. Danger signs

The danger signs locate along the road side and construction road. These signs are triangle shape with red borders and danger sign inside.



**Construction
road**



Danger!



**Major road
intersect with
minor road**



**Pedestrian
crossing**



**Be aware of
children**



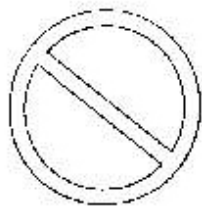
Bend to right



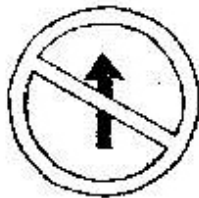
Bend to left

1.2. Prohibition signs

The prohibition signs locate on the right road side, these signs are round shape with red border and prohibition signs inside.



No parking



No ahead



No right turn



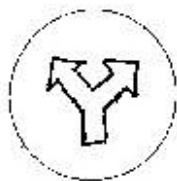
No left turn



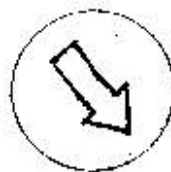
No sound

1.3. Direction signs

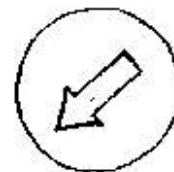
Direction signs are round shape with blue background and direction signs inside.



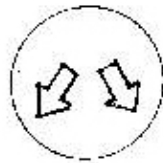
Turn left or right



Keep right



Keep left



**Bend to
left or
right**



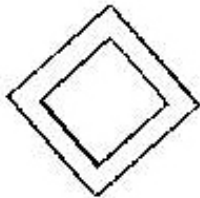
Circle way



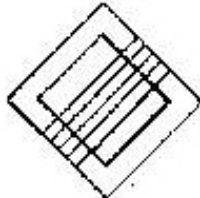
Minimum speed

1.4. Giving-right signs

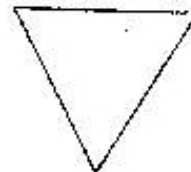
The giving-right signs locate on the right road side and indicate the giving-right to travelers to follow.



Main road



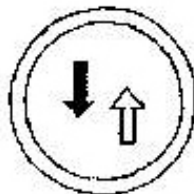
End of main road



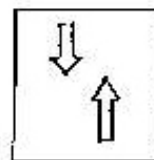
Give way



Stop



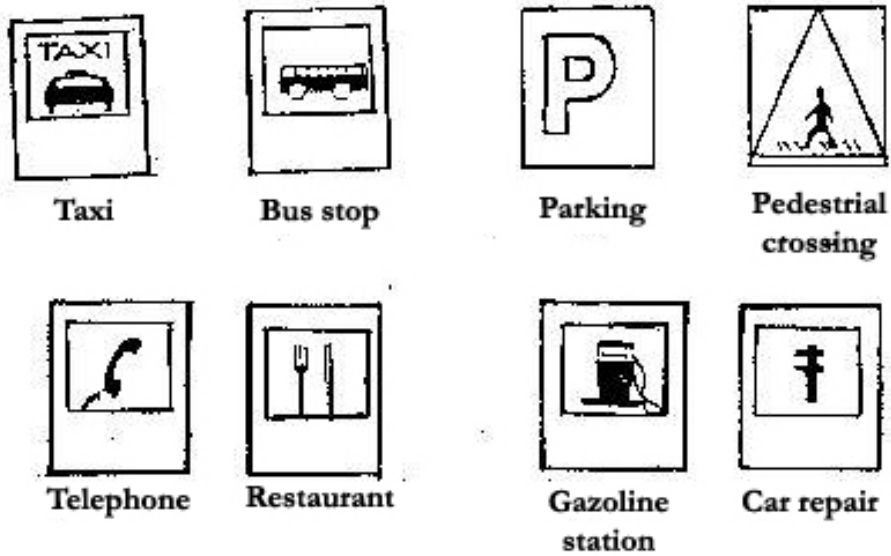
**Give way to
on coming vehicles**



Go first, move first

1.5. Information and Services signs

The information and services signs indicate to various services to traveler to find out the demanded places. Information and services signs are rectangle shape with blue background and information and services signs inside.

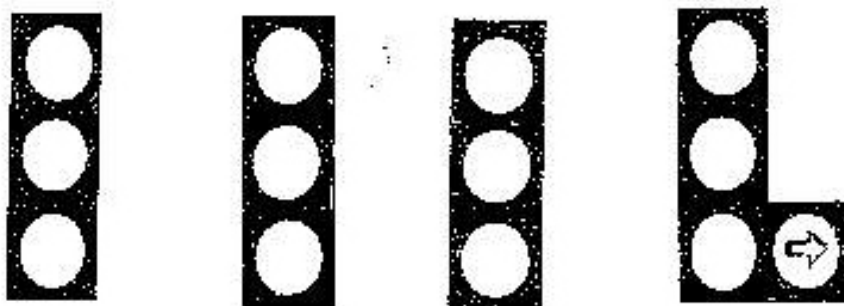


2. Traffic light system

The traffic lights are the signal lights and have meaning as following:

- Red light: don't allow to pass
 Yellow light: information of the changing lights from red to green or in the opposite. Not allow to pass; and allow to pass incase of necessity and be safe enough.
 Green light: allow to pass
 Red light with green arrow: allow to turn right.

These below figures are available on the intersection of main road



Reading:

Please do not drive, if drunk

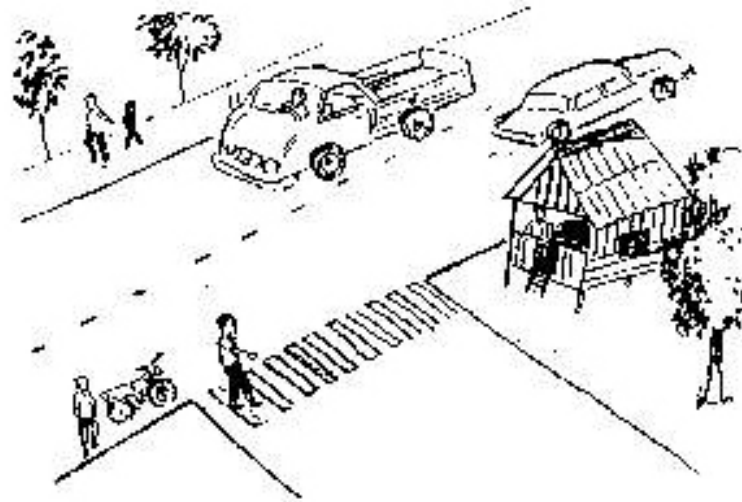
Last week, my father and me came to the city to visit my relatives. We saw car accident. The truck has hit to the motobike. One man was lying down and felt very painful in front of the truck, and the damaged motorbike. Once I saw it, I feel scary and do not want to get closer. My father called to the people who were looking at this accident: "bring him to the hospital, please!, please hurry up!". The truck owner got shocked and confused; he did not know what to do.



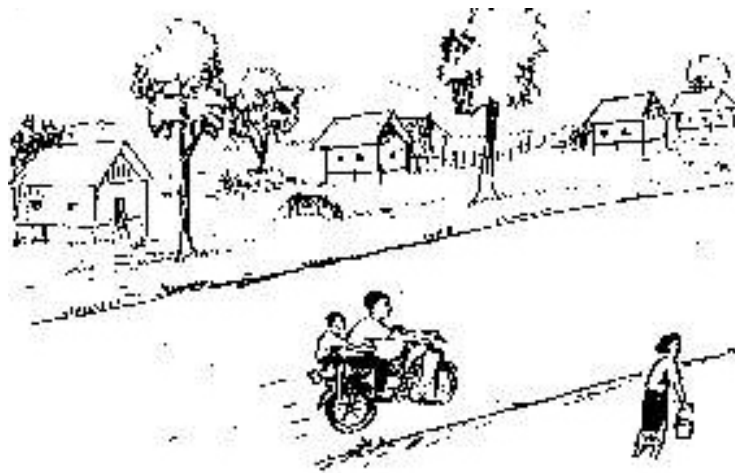
Suddenly, a car was coming on the way; my father stopped the car and asked for help from the car driver to bring the unlucky men to the hospital. Unfortunately, he has refused to help. My father told to one man, to find a chalk or charcoal and traced on the ground to marked the place where the accident was happened, and told the truck driver brought the injured man to the hospital.



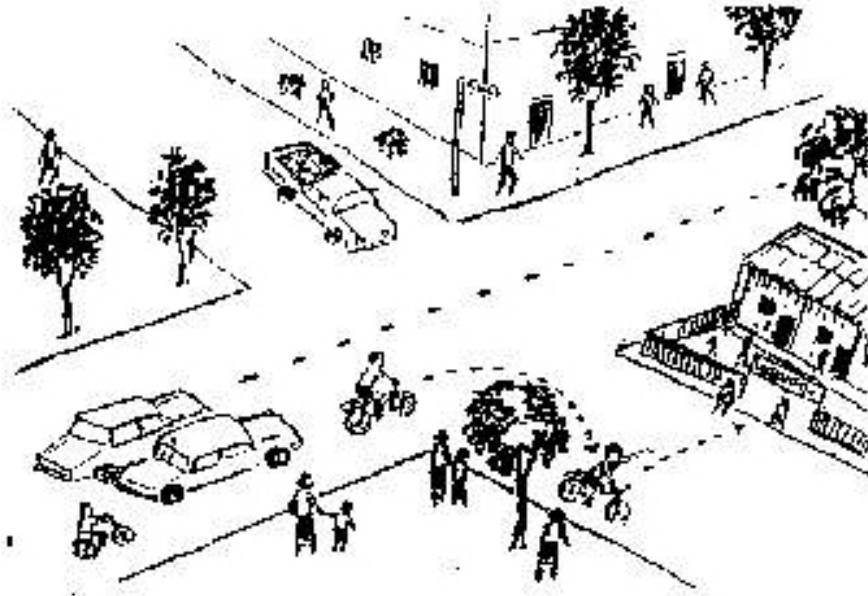
The truck has brought the injured man to the hospital. My father and me followed them by our motorbike, to inform the police to come to the place of accident.



On the way, I asked my father: "Why such accident was happened?", my father answered: "The truck" driver was drunk, the truck was tried to give the way to one child's bicycle to cross the road, but his truck was hit to the motorbike, which was also drunk". "Oh, if he is drunk, he should not drive, isn't father?" I said. "That's right. Anyway, pedestrians, drivers and passengers should be very careful in traveling. You also, riding a bike, should be very careful. Before crossing the road, turning left or right, you should tend your hand ahead to ask for the way, reduce your speed and make sure that it is safe, then you can turn or cross the road. The child who rides the bike was almost hit by the truck".



I was quiet and listened to my father. I thought about when I was almost hit by a car, because I did not give a signal for asking the way. The today accident and my father saying made me to be more careful in traffic.



Questions:

1. How the accident in this story was happened?
2. What are damages that the injured man has got?
3. To prevent from the road accident, what the students should do?

4. Singing:

Lyrics by Mr. Bounnou Thongphengchan
 Music and sung by Mr. Phonesith Koummala
 (cha-cha-cha)

The Remind from The Three Road Signs

Triangle shape sign
 If careless may die
 If anyone has seen
 Reducing our speed

in red warns the danger
 all the life will be destroyed
 please keep in mind the traffic rules
 would be very beneficial to ourselves

Prohibition Circle Signs

The sign is well-indicated

The most important

Keeping safe

with white background and red border

for reminding us

is not to violate the rules

as the most valuable thing

Another Road Sign

To tell us to

The traffic rules

Moving by the arrow

of circle-shaped with blue background

is to tell the traffic right

follow the sign

should be in mind

but not violating it

Lesson 6 Social disordering

1. Cause of fascinate gambling:



Adult playing cards

- Sandal-throwing gambling
- Foot-ball gambling
- Card-playing gambling
- Lucky-draw gambling
- Getting money from watching adults playing card
- Friends persuading

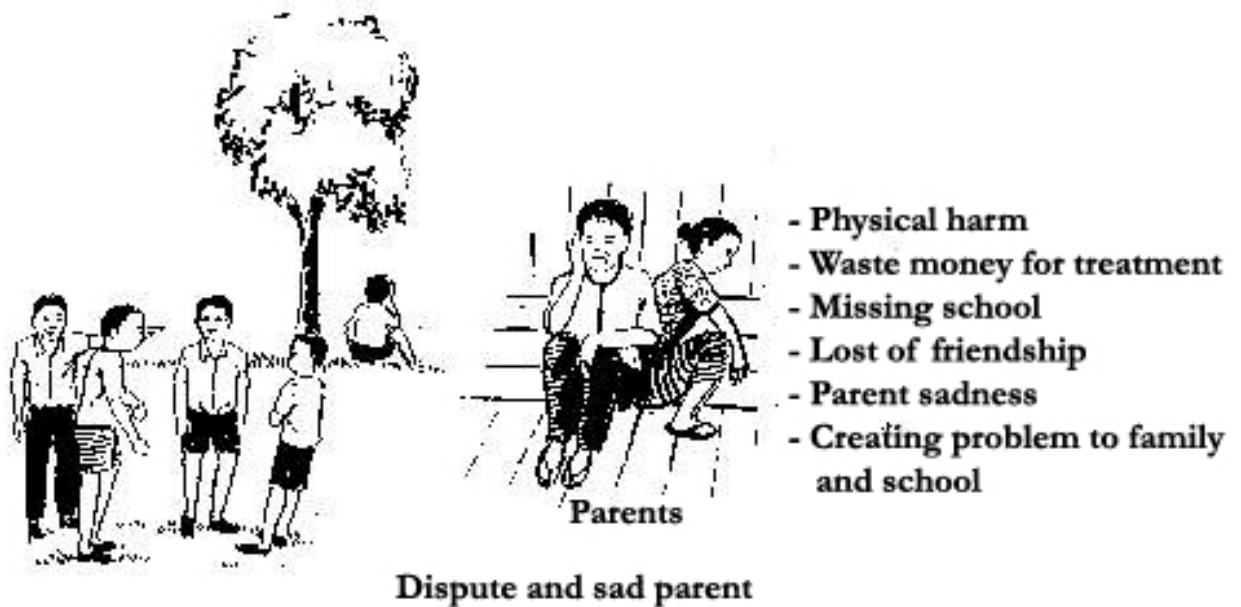
2. Misunderstanding:



Wallet stealing and fighting

- Teasing each other
- Stealing belonging of each other
- Hiding belonging of each other

3. The effect from the gambling and misunderstanding



4. Story: "If it is wrong, just improve it"

Mr. Seng liked to watch elder's people playing cards and some of them earned a lot of money. When watching these elders playing, sometimes he earned some tips. Sometimes, he earned some tips just for service in buying cigarettes. Since then, Mr. Seng started to addict playing cards for money.



On the next day, he told his friends to go for playing cards. At first, the game was just for fun, but after that, the game was for gaining money. After sometimes the game was very enjoyable and a lot of fun. At this game, he has earned a lot of money, felt happy and wanted to play again.



Mr. Seng continued to tell his friends for playing cards. He played since morning until 4:00PM and forgot going to school. At this game, there was cheating and hiding cards. When the cheating player was catch up, he was unsatisfied and unhappy to his co-players that made these friends separated into gangs. These gangs disputed and fight each other at the game which was harmful to all of them.



Regardless to this condition, Mr. Seng still wanted to play. He with his friends have stolen chicken and ducks of the villagers, robber some houses at night.

For this misbehavior of being a thief for several times, nobody could not catch him. Unfortunately, he was catch up and arrested by the local police, which sent him to the Village Head Office for investigation. Prior investigating, the head of the village called his parent to join to the investigation. Finally, he was sentenced to pay back for all damages and lost that he did.

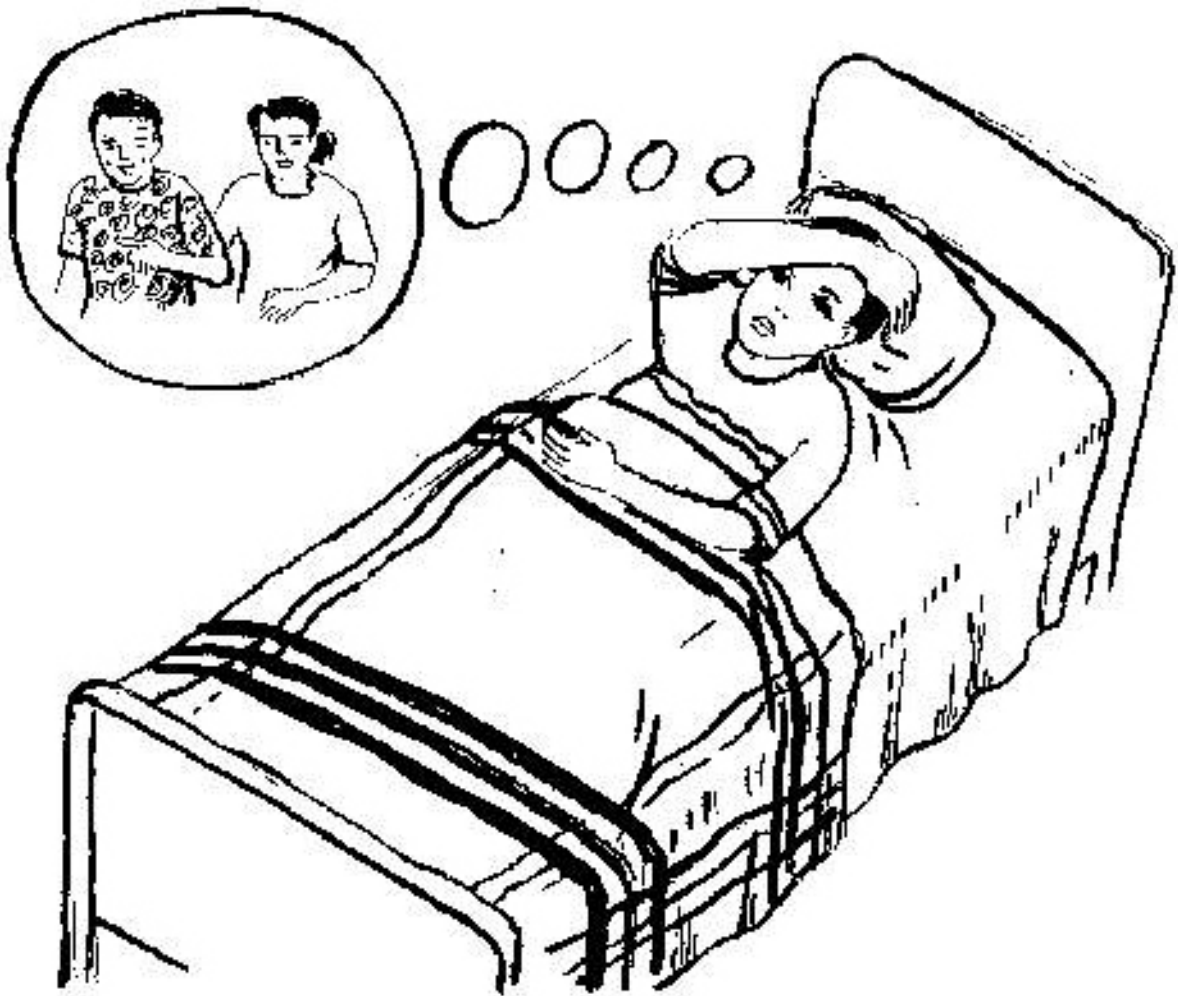


The parent of Mr. Seng was very sad and felt sorry for his behavior, and did not know what to do. Anyway, his mother still encouraged him to stop misbehaving, and taught him the nice way of living, that would not let him to repeat his misbehavior.



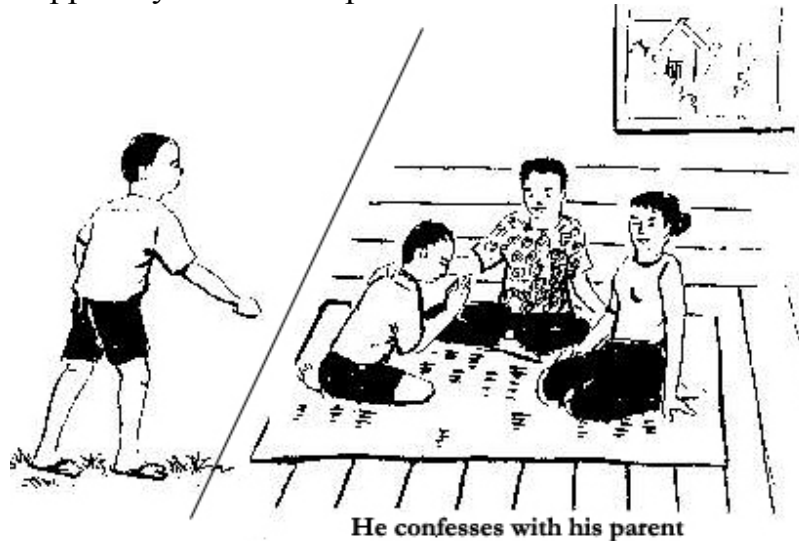
Mr. Seng felt sorry for himself, that he was a slave of the gambling, stealing, robbery, of be absence at school, for wasting his parent money, which was very shameful to his parent.

When he was thinking about, he was awoken by what his mother said: "Son, you are still young and your way of life to the future is still in a long way, if we lost you, who will support us and our family in future?"



He consider on his mother's advices

Once Mr. Seng has realized about what he has done, he was in hurry to his mother to confess for his mistakes. He said: "Mother, since now, I will never play cards anymore, I will not steal and robber the villager's belonging and also I will not miss the school, I will improve myself to be your nice son and I will not disappooint you as in the past"



On the next day, Mr. Seng went to school in the morning and get into the Teacher Office. He sat down gently and greeted the teacher: "Good morning, teacher" and reported about what he misbehaved in the past to the teacher. The teacher listened and understood about it. He reminded Mr. Seng and punished him by asking him to write a self-evaluation sheet as an evidence to his self-education in the future.

After swearing himself to his parent and teacher, Mr. Seng has improved himself to be a nice student. He has stopped gambling, but helping his parent and family, and concentrate to his study and became good student in the class.

