

# **Applied Ethical Education – Humanism at Home and School**

Manual 4

Age 10, ie School Grade 4



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# Who are you and who am I?

**To enable children to realize that first impressions are not always right. Encourage them to find any prejudices.**

Questions to the discussion circle:

- Is the first impression you get of someone always right?
- When do you want to become friends with a child you don't know?
- When do you avoid someone, when do you ignore someone?
- Does this have anything to do with the way this person looks?

The teacher introduces a large number of different photographs of children. (Try to make sure these include a good many of children from other cultures, e.g. UNICEF, or Oxfam calendars.) Each child is given a photograph and a worksheet with questions on it and lines for answers. They stick the photograph in the middle and, working individually, answering:

What do you think of this person?

- Could you trust them?
- What two things describe them?
- What name would you give them?
- Would you like to be friends with them?
- What would they enjoy doing?
- What else do you want to say about them?

The worksheets are put up. Every pupil, or a group, is invited to say something about their own worksheet and ask each other questions about it.

(Alternatively to the worksheet, excitement can be added by using an envelope with the photo stuck to it and the children write their comments on a blank piece of paper to put in it for later withdrawal and discussion.)



## You are .....

**This lesson is a continuation of “Who are You ...?” in the previous Lesson. The emphasis here is on the reasons why people leave their environment.**

The children paste the line-drawings of the human figure they cut out in the previous tutorial onto a blank sheet of A4 paper; the figure is pasted onto the paper with the coloured side up. During a brief discussion, the children explore the reasons why people are prepared or forced to leave their home or country. These reasons are listed on the board.



The children write a story about the figure on the sheet; the story gives the reason why this child has left the place in the world the children had previously drawn for him or her.

The children read out their stories. If the group is very large, this can be done in smaller groups. Looking at the stories, each group or the entire class make up a list of reasons why people leave. The children adopt a certain viewpoint towards the various reasons and argue their point with the other children. The children work together to find ways in which they could come into contact with children who have left their native country and now live in our country.

Tip: Paste the sheets with the figures and stories onto wallpaper and hang this length of wallpaper below the wallpaper from the previous tutorial.

## Marbles for Homework<sup>1</sup>

**To study all angles to telling lies about homework.**

John had stayed longer than intended playing basketball with his friends in the park, before going home after school. He had promised his grandfather that he would help him finish making a garden seat as a surprise for his grandmother.

On the way home he called to see his friend Jessica and gave her some marbles in exchange for a copy of the sums they had to do for homework.

John's mother said that he could not go to help his grandfather until he had finished his homework. John said that his homework was all finished.

John's grandfather was very pleased that John had helped him finish the garden seat in time for Grandma's birthday.

The next day, when John and Grandpa gave the seat to Grandma, everybody thanked them and said what a good job they had done.

**Photocopy the sheet for each child so that they can write on it and give their opinions on the story.**

Does it matter that John cheated and told lies to achieve his purpose?  
What else could John have done to help his grandfather?



*(Refer to Cam et al<sup>2</sup> for ideas on the development of this story)*

1. Adapted from *Resources for Studying Ethics in Primary Schools, 1996*, with permission from the Queensland Department of Education, p 107.

2. *Philosophy with Young Children – A Classroom Handbook*, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo, Australian Curriculum Studies Association, 2007, Deakin West, ACT, 2600.

# Giving and Receiving 1

**To learn what feelings and values are involved in caring and helping, and to show care and attentiveness with each other.**

After a brief discussion about caring for and helping others, each pupil puts his or her name on a piece of coloured paper. These pieces are put into a large hat and each pupil withdraws a piece of a different colour from the one they put in themselves. The name on the paper must remain secret. The teacher explains that each pupil has to give their person particular attention during this lesson in such a way that this person does not immediately realize who is looking after him or her. The person must experience extra care, attention or help. This allows the children to practise being thoughtful in a discrete way.

Lay out a long course around the room with a rope. The rope has small cards attached upon which are questions and tasks. The children make up the questions and perform the tasks. They can do this by themselves or with others.

- Whom have you helped in the past?
- Whom was the last person you helped?
- Who helps you sometimes?
- Make up a verse about 'taking care of someone'
- What do you enjoy about taking care of someone?
- How do you feel when someone takes care of you?
- Towards whom do you show most attentiveness?
- Who shows the most attentiveness towards you?
- By whom would you like to be shown more attentiveness?
- Make up a wish card for someone whom you think needs to be shown attentiveness (this does not have to be from the group).
- Think of three ways you can show attentiveness or care towards someone who needs it.

## Giving and Receiving 2

**This tutorial continues the theme from Giving & Receiving 1.**

**The task can take up the entire week.**

During the second period children try to think who had whose name on their piece of paper and what their guesses are based on.



Then everyone talks about how they went about the task and what their experiences were. If you are dealing with a large group then the children can look for those children whose name they had on their piece of paper and talk with each other.

The children talk with each other about who they think gave them extra attention and care (task from the introduction). Discuss what it was that made the children realize who it was and how they felt about that. Those children of whom no-one guessed say whose name they had on their piece of paper and how they tried to show this person extra attentiveness. Then the questions from the core can be discussed.

The children interview each other about what they have learnt over these two periods.

What did you find easy or difficult about what you experienced?

As a result of these lessons, do you now handle someone who needs to be shown care and attentiveness any differently? Explain. The interviewers report back to the class.

## A good friend is someone who....

**To get children to begin to understand what friendship means to them. Enable them to define important traits in friends. Enable them to make a connection between their own problems and needs and the extent to which friends and/or advisers can help. Encourage them to be willing to discuss this with each other and learn from it.**

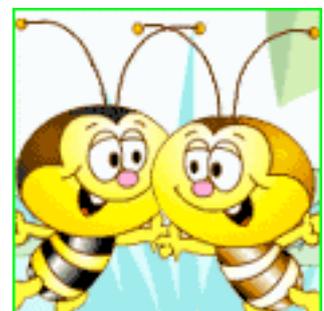
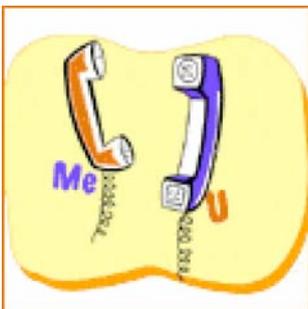
1. The children tell the class briefly about their best friend. They make up a list together on the board of what they think is important about this friendship.

2. The children extract a top 5 list about friendship. The explanation should examine a person's strengths/good traits. This does not have to relate to a specific person; it can be taken from a general perspective. The top 5 list could be introduced as follows:

'A good friend is someone with whom you can ..... ' etc.

Afterwards the children make up their own top 5 list about friendship.

3. The children answer the question: which friend do I turn to when I have a problem and why?



Adapted with permission from *Mastering the Art of Living and Becoming a Citizen of the World – It Isn't Something that Just Happens*, by Tryntsje de Groot and Emma Klarenbeek of the Dutch Centre for Humanist Ethical Education, 2002, P.O. Box 85475, 3508 AL Utrecht, The Netherlands.

## A boasting session

**To enable children to know what they are good at and be willing to show others. Inviting the children to respond positively to each other's contribution.**

**The teacher is to ask the children in advance to bring along things that have to do with their hobby.**



A boasting session: the children take turns to talk about what they are good at. They have to boast a little and if there isn't enough boasting the first time, they do it a second time.

Many children at this age already have a real hobby (this could also be a sport) that they devote a great deal of time to. The children think about how they can do a presentation on their hobby to the other children, how they can act out their hobby, what pictures they can show about their hobby.

They can also draw a picture or write a poem about it. The presentation must include the following information:

- How much time and effort do you devote to it?
- What you enjoy about it?
- Whether anyone can have this hobby or whether you need a special talent for it?

Working in small groups, the children do a presentation on their own hobby in front of their fellow-children.

Closing question to the group as a whole: which presentation surprised you most? Which hobby would you like to have most, if there were no restrictions about your choice.

Grade 4 - Environment 1

## Schoolground's Camouflage Egg Hunt

(This a repeat of the Grade 2 egg hunt.)

**In the natural world, predators are always looking for something to eat. Animals that are *camouflaged* have the same colour and patterns as the environment around them. A predator will generally notice, catch, and eat only the most easily captured prey; after its belly is full, there is no need to keep hunting. The aim is to show how camouflage can help organisms survive.**

**The teacher should arrange for 1 dozen white eggs in a carton, a stove, a pot and a set of coloured felt pens (greens and browns), or crayons, pencil and paper.**

Boil the eggs have boiled for seven or eight minutes, cool them down by running cold water over them in the sink or placing them in the refrigerator.

Put all twelve eggs back in the carton and bring them, along with a friend, outside to a natural area with grass, dirt, bushes, and other plants.



Children are to work in pairs. They sit in a comfortable spot, look at the surrounding environment, and choose pens that match the colours of the plants and other features. Then take three eggs each and, one by one, draw camouflage designs on them using different coloured pens to match the shadows and stripes and other patterns in the area – greens for grass, browns for dried leaves and greys for dirt, etc. Think about where you might be placing these eggs when

deciding how to camouflage them. If you are going to place them in the grass, use a variety of greens. Six eggs are left white.

One child now closes his or her eyes while the other places all twelve eggs around the area. For the experiment to work properly, the white and coloured eggs should be placed in similar locations - don't hide all the camouflaged eggs in the most difficult spots while leaving the white eggs out in the open. For every white egg placed in the grass, place a camouflaged egg also in the grass. After the eggs have been hidden, the first child looks around and picks up the first six eggs he or she finds to bring back.

On one half of the paper write "Camouflaged" and on the other half write "Uncamouflaged." Make a mark under each heading for each egg found.

If the colour of an egg's shell didn't make any difference to the child "predator," he or she should find, on average, just as many camouflaged eggs as white eggs: three each. But how many of each kind did they actually find?

Retrieve the remaining six eggs, and the pairs of children repeat the experiment swapping roles. Write down the data from the new trial. Repeat the experiment several more times until you begin to see a pattern in the totals. Did the colouring on the eggs help or hurt their chances of being detected by a predator?

## Energy from the sun

**To explore solar collection in two related experiments.**

**When solar energy hits objects, some of the energy is reflected and some is absorbed and changed into heat. Some colours absorb more solar energy than others.**

**The teacher should supply three thermometers, 4 plastic containers, black & white construction paper, water, thermometer, plastic wrap, rubber bands, scissors.**

Step 1: Put three thermometers in a sunny place.

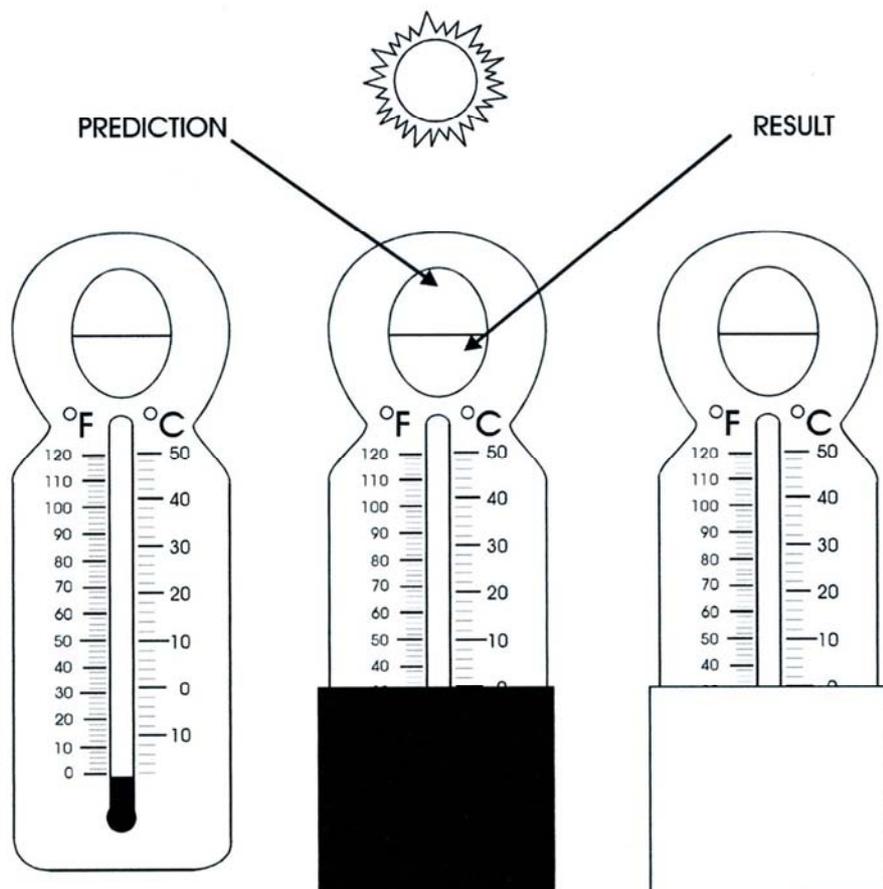
Step 2: Cover the bulb of one with black paper. Cover the bulb of one with white paper.

Step 3: Predict which thermometer will get hottest. Number them 1-3, with 1 as the hottest.

Step 4: Wait five minutes.

Step 5: Record your results by colouring the tubes of the thermometers.

Step 6: Look at the results and number the thermometers 1-3 with 1 as the hottest. How well did you predict?



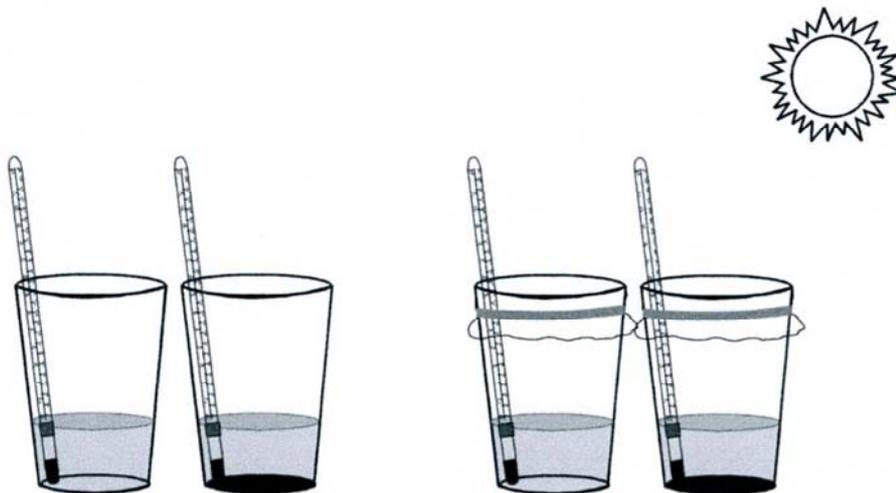
**In this version the method is carried to the stage of recording the results in a systematic way.**

Step 1: Cut two circles each of white and black construction paper to fit the bottom of the containers. Place the circles on the bottom of the containers and cover with 100 ml of cold water. Record the temperature of the water.

Step 2: Cover one black and one white container with clear plastic wrap held in place with rubber bands.

Step 3: Place the containers in a sunny place so that the sun is directly over the containers. Record the temperature of the water after ten minutes.

Step 4: Calculate and record the changes in temperature.



**RECORD THE DATA**

	WHITE NO COVER	BLACK NO COVER	WHITE WITH COVER	BLACK WITH COVER
Original Temperature-C				
Temperature-C After 10 min				
Change in Temperature				

## Mapping plants

**To learn mapping skills and encourage vegetation in school grounds.**

**The teacher is to get blank paper, school map, pencil/pens (coloured), folder/clipboard and permission to walk around the school grounds.**

On a map of the school children locate main plants in part or all over school grounds using different colours. Use common names and show plant height, plant type (eg tree, large shrub, small shrub and groundcovers) and whether the plants are locally native, 'exotic native' (eg from Victoria) or exotic.

Identify and shade in possible green corridors (lines or clumps of plants).

Also identify areas in the school playground that could be linked to corridors or repaired by planting seedlings.

Encourage students not to worry about scientific names of plants. They could even make up their own names for plants they are unable to identify. When determining corridors the idea is to link existing clumps of vegetation - don't draw corridors that lead to a busy main road for instance.

Ask the children to display their maps, perhaps a week later and say whether they think that there are enough native pieces to withstand drought. Also can they suggest plants that could supply useful products that could be used in the school – wood to make (small) furniture, berries for lunch, wax to mend things, etc.

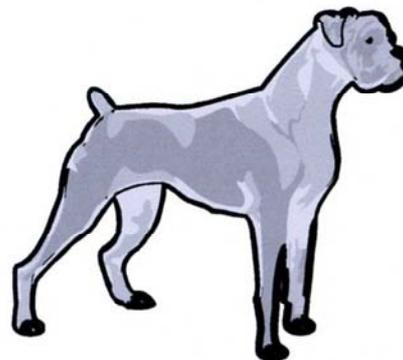
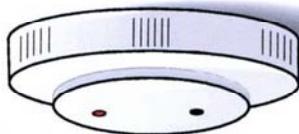
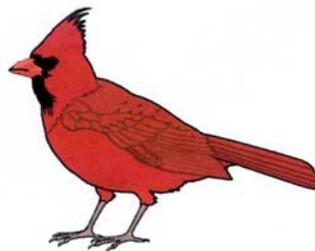
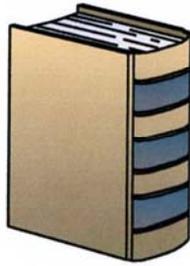
Enquire if there is a local aboriginal community, get their name and ask if they know some of the species in the grounds. What would have been the uses of the plants. What plants were there before white people came? Should the school get more of these?

## Sound the Alarm

**Safety consciousness interacts with the environment and calls in question the way that energy is used to enhance our quality of life.**

**The teacher is to provide a sheet for each pair of students.**

Have the students encircle the objects that use sound as a warning signal. Discuss each object and other ways sound is used as a warning signal.



**Possible answers:** fire truck's siren warns people to move out of the way; cell phone could warn someone of danger; bird could warn other birds; dog's barking could warn of intruder; smoke alarm signal warns of possible fire.

Ask the children to go further and talk about whether they should warn each other and what is the most effective way of doing it. Practise catching attention and then communicating what is required in some play acting of dangerous situations.

Grade 4 - Philosophy 1 – ethics, epistemology, metaphysics

## **Personal identity 3**

**To establish criteria for personal identity.**

*The lesson to be included here will be based on references 1 and 2 below*

1. The Bunyip of Berkeley Creek by Jenny Wagner (and Don Brooks), Puffin, 1973, 80 Strand, London, WC2R 0RL.
2. Philosophy with Young Children – A Classroom Handbook, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo, Australian Curriculum Studies Association, 2007, pp 38 - 42, Deakin West, ACT, 2600.

***TEACHING CHILDREN TO THINK ETHICALLY BY PARTICIPATORY LESSONS FOR AGES 4 - 12***

## Friendship 2

**Aim:** to show different kinds of friendship.

*The lesson to be included here will be based on references 1 and 2 below*

1. The Very Best of Friends by Margaret Wild and Julie Vivas, Scholastic Press, , 2004 Lindfield, NSW, 2070, Australia.
2. Philosophy with Young Children – A Classroom Handbook, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo, Australian Curriculum Studies Association, 2007, Deakin West, ACT, 2600.

## Feeling good 2

**Aim:** to show what people do at times to feel good on demand.

*The lesson to be included here will be based on references 1 and 2 below*

1. Miss Lily's Fabulous Pink Feather Boa by Margaret Wild and Kerry Argent, Puffin, Victoria, Australia, 1999
2. Philosophy with Young Children – A Classroom Handbook, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo., pp 30 – 32, Australian Curriculum Studies Association, 2007, Deakin West, ACT, 2600.

**TEACHING CHILDREN TO THINK ETHICALLY BY PARTICIPATORY LESSONS FOR AGES 4 - 12**

## Friendship 3

**Aim:** to explore friendship when feeling unloved.

*The lesson to be included here will be based on references 1 and 2 below*

1. The Very Best of Friends by Margaret Wild and Julie Vivas, Scholastic Press, , 2004 Lindfield, NSW, 2070, Australia.
2. Philosophy with Young Children – A Classroom Handbook, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo., pp 43 – 44, Australian Curriculum Studies Association, 2007, Deakin West, ACT, 2600.

## **Friendship 4**

**Aim:** to explore friendship in time of grief.

*The lesson to be included here will be based on references 1 and 2 below*

1. The Very Best of Friends by Margaret Wild and Julie Vivas, Scholastic Press, , 2004 Lindfield, NSW, 2070, Australia.
2. Philosophy with Young Children – A Classroom Handbook, Philip Cam, Liz Fynes-Clinton, Kathlyn Harrison, Lynne Hinton, Rosie Scholl, and Simon Vaseo, Australian Curriculum Studies Association, 2007, Deakin West, ACT, 2600.

# The Little Dutch Boy<sup>1</sup>

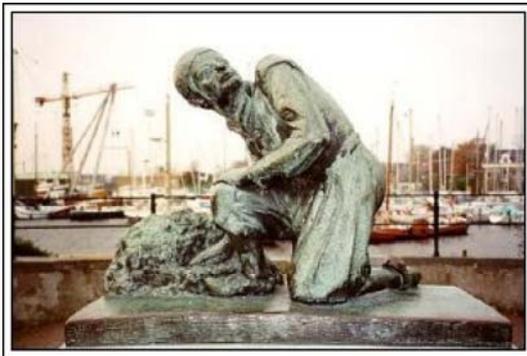
**To teach them that if they act quickly and in time, even they with their limited strength and resources can avert disasters.**

**In an exaggerated version of Mary Mapes Dodge's story the boy was late home and had to spend all night plugging the leak.**

The fact that the Little Dutch Boy used his finger to stop the flow of water, is used as an illustration of self-sacrifice. The physical lesson is also taught: a small trickle of water soon becomes a stream and the stream a torrent and the torrent a flood sweeping all before it, dyke material, roadways and cars, and even railway tracks and bridges and whole trains.

This tale originates from the American writer Mary Mapes Dodge and is in fact not a real myth, although many people believe it is. She published this tale in 'Hans Brinker, or the Silver Skates' in 1865. The Little Dutch Boy is a very popular myth in the United States (and other countries), but is not well known in the Netherlands and has probably been imported there by American tourists.

The teacher should provide drawing materials and encourage the children to draw light-hearted cartoons, which bring out the above points. A little vulgarity might be tolerated.



1. Hans Brinker or the Silver Skates by Mary Mapes Dodge , 1865; see [http://www.pantheon.org/articles/l/little\\_dutch\\_boy.html](http://www.pantheon.org/articles/l/little_dutch_boy.html) for article by Peter Miller.

2. <[http://www.cartoonstock.com/directory/b/boy\\_with\\_finger\\_in\\_dyke.asp](http://www.cartoonstock.com/directory/b/boy_with_finger_in_dyke.asp)>

## Communication skills<sup>1</sup>

**To have the children teach each other to listen, and be patient if the listener won't respond.**

The teacher selects children to work in pairs with one trying to tell the other something, which could be something of their own invention or perhaps a kid-speak poem from one of June Factor's books. The teacher emphasises briefly the importance of

- making eye contact
- asking relevant questions
- paraphrasing and summarising what had been stated
- avoiding distracting habits

In the absence of something from the children, themselves, try them out reading/reciting:

*One two three.*

*Mother caught a flea,*

*Put it in the teapot  
and made a cup of tea.*

*When she put the sugar in  
it went down flop,*

*And when she put the milk in,  
it came to the top.<sup>2</sup>*



Now the teacher reverses the roles with the difference that the listener does everything wrong. Can the reciter complete their presentation?

<sup>1</sup> Private communication from David Fotheringham, 2008.

<sup>2</sup> 1 Okey Dokey by June Factor, Brolly Books, 2005, Malvern, Vic., Australia, 3144.

## 2,500 years of the Golden Rule

**This lesson is a repeat from Grade 3. Teacher is to photocopy this page and ask the children to take turns in reading through it and using the ‘traffic lights’ for ‘good’, ‘not so good’ and ‘?’. Try out discussion or play acting on the version for business.**

“He should treat all beings as he himself should be treated. The essence of the right conduct is not to injure anyone.” *JAINISM, 550 BCE*

“I will act towards others exactly as I would act towards myself.”  
*BUDDHISM, 500 BCE*

“Do not do to others what you would not like for yourself.”  
*CONFUCIANISM, 500 BCE*

“Love your neighbour as yourself.” *JUDAISM, ca 400 BCE*, traditionally believed to be quoted by Jesus, *ca. 30 CE*

“This is the sum of duty: Do nothing to others which, if done to you, could cause you pain.” *HINDUISM, 150 BCE*

“What you would avoid suffering yourself, seek not to oppose on others.”  
*STOICISM, 90 CE*

“What is harmful to yourself do not do to your fellow men. That is the whole of the law....” *JUDAISM, 100 CE (Hillel)*

“None of you truly believe, until he wishes for his brothers what he wishes for himself.” *ISLAM, 7<sup>th</sup> century CE*

“As you think of yourself, so think of others.” *SIKHISM, 1604 CE*

“One should be contented with so much liberty against other men, as he would allow against himself.” *MATERIALISM, mid 1600s (Thomas Hobbes)*

“He should not wish for others what he does not wish for himself.”  
*BAHA’I, 1870 CE*

"Selfishness is not living as one wishes to live, it is asking others to live as one wishes to live." *DILETTANTISM (?) Oscar Wilde, late 1880s*

“You should always ask yourself what would happen if everyone did what you were doing.” *EXISTENTIALISM, Jean-Paul Sartre, mid 1900s*

“Treat other people as you would want to be treated in their situation; don’t do things you wouldn’t want to have done to you.” *British Humanist Association*

“The teachings of both Christ and Marx ask us to follow The Golden Rule, which is, to put it bluntly, piffle.” *PREFERENCE UTILITARIANISM,*

*Dick Gross, Melbourne, 1999*

“There’s no such thing as a free lunch!” *Business reciprocity*

# The United Nations Declaration of Human Rights

## To intrigue the children with the idea of a Bill of Rights

Ask the children to take turns in reading until they tire. Then ask if there should be a children's Bill of Rights.

- **All people in the universe are born free and equal.**
- **No one has the right to take away another's freedom because of age, sex, race, colour, beliefs, or language.**
- **These freedoms belong to all people. It does not matter where they live or how rich they are or how much power they have.**

1 The right to life

2 The right to freedom

3 The right to be safe from harm

4 The right to humane punishment

5 The right to be treated fairly under the law

6 The right to a trial if a criminal charge is brought against a person

7 The right to be presumed innocent until proven guilty

8 The right to privacy and to an honourable reputation

9 The right to travel within a country or outside of its borders

10 The right to seek asylum in another country

11 The right to a nationality

12 The right to marry and raise a family

13 The right to own property

14 The right to believe and think as a person chooses

15 The right to express an opinion aloud

16 The right to assemble peaceably

17 The right to take part in the government

18 The right to work for a fair salary and to receive equal pay for equal work

19 The right to join or form a union

20 The right to rest and leisure

21 The right to adequate food, clothing and shelter

22 The right to adequate medical care

23 The right to unemployment insurance in case of sickness, disability, old age

24 The right to a free education

25 The right to enjoy the arts and to share the benefits of science

# Air Pressure<sup>1</sup>

**To show that air has substance, even though we can't see it, and is contained in other materials.**

**We live at the bottom of an ocean of air, which is one of the essentials for life. Man also makes use of air pressure in many of his daily tasks.**

**To show where air may be found**

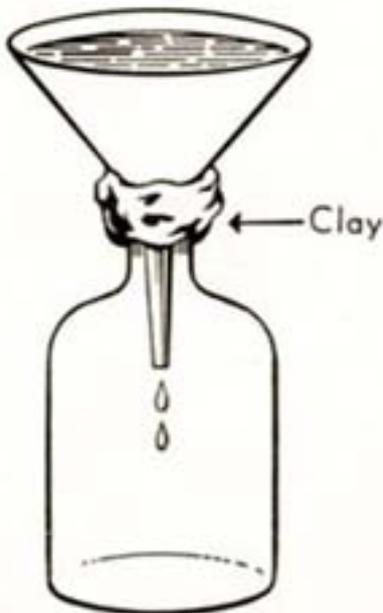
1 Plunge a narrow-necked bottle, mouth down into a jar of water. Slowly tip the mouth of the bottle toward the surface of the water. What do you observe? Was the bottle empty?

2 Place a lump of soil in a container of water and observe. Did you see anything that might indicate the presence of air in the soil?

3 Secure a brick and place it in a container of water. Is there any evidence that air inside the brick?

4 Fill a glass with water and observe closely. Let the glass stand in a warm place for several hours. Observe again. What difference do you see? Is there any evidence that water contains air?

**To show that air takes up space.**

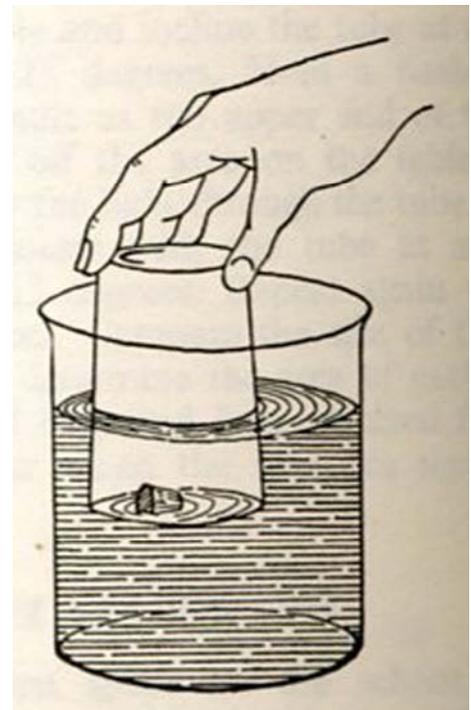


1 Secure a bottle and a funnel. Place funnel in the neck of the bottle. Fill the space around the funnel tightly with modelling clay. Pour water slowly into the funnel until nearly full. What did you observe?

2 Now puncture the modelling clay with a nail. What happened?

3 Float a cork on a

large glass jar full of water. Lower a drinking glass downward over the cork. What do you observe? Wedge a piece of paper tightly into the bottom of the glass and repeat. Does the paper get wet?



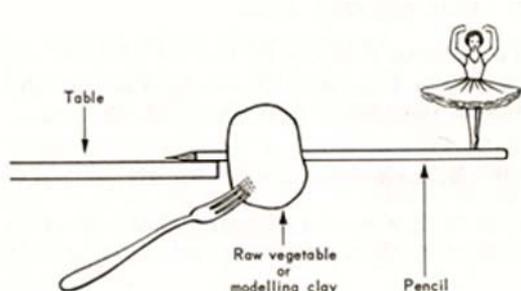
Source book for science teaching, UNESCO, Paris, 1956, p 76.

# Balancing<sup>1</sup>

## 1 A balance trick

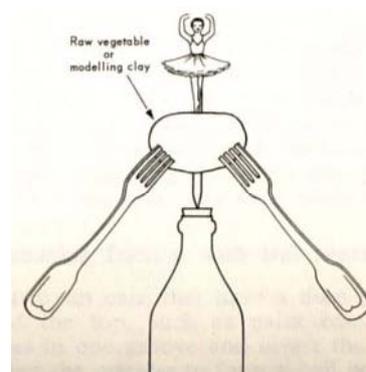
Obtain a smooth metre stick and let it rest lightly on your two forefingers. Place your fingers near the ends of the stick and then move them toward the centre. Where do your fingers meet on the metre stick? Place the finger of your right hand near the end of the metre stick and the other about half way to the centre on the other side and repeat. Where do your fingers meet this time? Reverse and put the finger of your left hand at the end while the finger of the right hand is about half way to the end on the other side. Where do your fingers meet now? Try other distances. Can you explain this interesting trick?

## 2 Some simple balance experiments



(a) With a sharp knife cut a slice of some raw vegetable or modelling clay about 2.5 cm thick. Punch the point of a lead pencil through the slice until it protrudes about 2.5 cm on the other side. Insert a dinner fork in the slice of vegetable as shown in the diagram. Now place the pencil point on the edge of a table and adjust the parts until balance is obtained; then give the long end of the pencil a little tap.

(b) Assemble a slice of raw vegetable or modelling clay, two dinner forks and a pencil as shown in the diagram and balance them on the top of a soda water bottle.



(c) Try to devise some other simple experiments with balance using common things found about the house or school.

## 3 Can you straighten the cord?

Obtain a strong cord or small rope about one and a half metres in length. Wrap another cord around a heavy book or other suitable weight. Tie the cord with the weight securely to the centre of the other cord so that it hangs about 15 cm below. Grasp the long end and try to straighten it by puffing your arms apart. Have a pupil pull on one end while you pull on the other. Can you straighten the cord?

## Experiments with gravity<sup>1</sup>

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### 2 Finding the centre of gravity of objects

Secure a triangular file and place it on a table as a balancing point. Any sharp-edged device with a flat side may be used. Balance various sticks, rods and devices such as brooms, bats, brushes, etc., on the knife edge and mark the place where they balance with a piece of chalk. Is the centre of gravity of every device you tested at the exact centre of the body? Which objects seem to have the centre of gravity at the centre? Where is the centre of gravity of the others usually found?

### 3 Falling bodies

If you can find a building that is about 20 m high in your locality you can study how gravity makes bodies fall faster the longer it acts on them. Get a piece of string long enough to reach from a point at least 20 m high to the ground. Fasten the cord so that it forms a straight vertical line. Opposite a window 20 m from the ground tie a piece of coloured cloth or yarn to the string. At about 5 m below this point tie another piece of coloured yarn. Have someone stand on the ground with a watch and call out the seconds. A good way is to beat seconds with the arm and call out 'A thousand and one-a thousand and two-a thousand and three'. This will beat seconds approximately.

Now station someone at the 5 m mark below the starting point and someone on the ground. Drop heavy stones and light stones. Drop small objects and large objects and see how far they have fallen at the end of one second and how far at the end of two seconds.

### 4 The coins fall together

Place a ruler obliquely on the edge of a table so that one end just projects over the edge and the other end is about 3 cm from the edge. Now place one coin on the projecting end and another on the table, between the other end of the ruler and the edge of the table. With another ruler strike a sharp blow, hitting the projecting end horizontally. One coin falls straight to the floor while the other travels a longer path. Carefully observe when each coin reaches the floor. You will have to repeat this experiment several times. What conclusions do you reach?

<sup>1</sup> Source book for science teaching, UNESCO, Paris, 1956, p 123.

# A Slide is A Simple Machine<sup>1</sup>

**To show that simple machines make work easier.**

**In Diagram 1, the child has to support the whole weight of the bag. An inclined plane makes it easier to lift things, as in Diagram 2, because it partially supports the bag.**

Get permission to use a playground slide, and provide a long rope (8 m), measuring tape, 4 heavy books and a sturdy canvas bag with handles.

Diagram 1

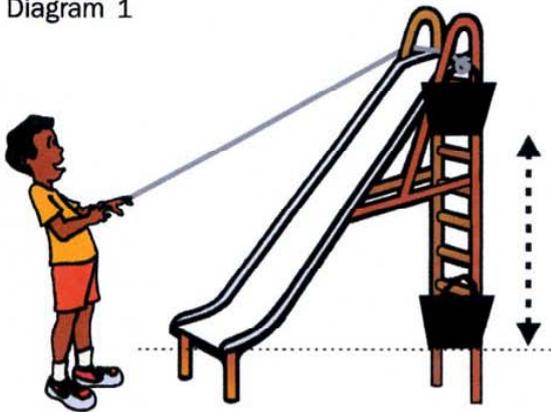
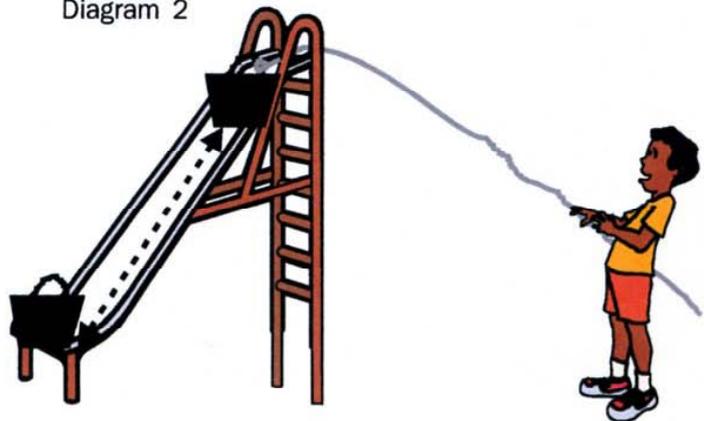


Diagram 2



- 1 Put the books in the bag and tie the rope to the handles.
- 2 Loop the rope across the top of the slide as shown in Diagram 1. Lift the bag to the height of the bottom of the slide.
- 3 Have a student lift the bag straight up through the air by the rope. Ask the student to observe the force it takes to lift the bag.
- 4 Measure the distance the bag was lifted.
- 5 Place the bag at the bottom of the slide and have the student pull the bag to the top of the slide, as in Diagram 2. Ask the student to observe the force it takes to pull the bag to the top.
- 6 Observe the distance the bag was moved.
- 7 Have each student conduct the experiment in turn.

**Results:** Have the students write or draw an explanation of the experiment. Compare the force needed in each case, as well as the length of rope.

**Conclusion:** An inclined plane reduces the force but increases the distance.

**Extensions:** Discuss ways that inclined planes are commonly used.

**Assessment:** Have students draw a picture of someone using an inclined plane. Have the students find inclined planes in pictures.

<sup>1</sup> The National Energy Education Development Project, April/May, 2004, <<http://www.need.org/>>.

## The world inside your fridge<sup>1</sup>

**To help pupils to realize that the 'world' is very close by and invite them to put together a pretend feast using both local and foreign products.**

As prior homework, open your fridge, larder or food cupboard at home and take a look at all the different foods stored there. Don't forget the herbs and spices. Write down where they come from and what you use them for. Also bring a few of different products from the supermarket.



The various products are put on a table and the pupils sit around to discuss.

- What strikes you about these products?
- Where do they come from?
- What do you think of these products: tasty, not so tasty, horrible?
- Are there products here that you used to dislike before but like now?
- How were these products made?
- How did they get to the shop or the market?
- What are these products used for?
- When and on which occasion are these products eaten?
- Are these products expensive? Why is that?

The pupils group the products from the same country together and are divided into four groups. Each group chooses a special occasion, e.g. Christmas, New Year's Eve, New Year's Day, a festival, a commemoration day, a school or class assembly, a class party, a birthday or a coming-of-age celebration.

- Think about what this day looks like.
- What do people do on that day?
- What do people eat and drink on that day?
- Are all children allowed to eat everything that is there? Why?

In their groups the pupils make their presentation of the day they have chosen. Do you see similarities and differences between these special days, in the day's programme, activities, customs, food and drink? Use this to start email exchange with children elsewhere in distant schools.

Adapted with permission from *Mastering the Art of Living and Becoming a Citizen of the World – It Isn't Something that Just Happens*, by Trynysje de Groot and Emma Klarenbeek of the Dutch Centre for Humanist Ethical Education, 2002, P.O. Box 85475, 3508 AL Utrecht, The Netherlands.

# Refugees<sup>1</sup>

**To enable pupils to put themselves in the shoes of a child that has fled another country and to hold out a helping hand to such a child.**

Read the poem, The Refugee, by Lava from Syria:

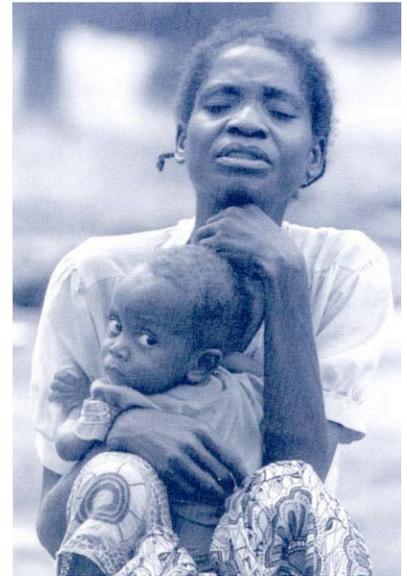
*Oh, you know, my friend, I wasn't born a refugee  
I never dreamt of being or decided to become a refugee.  
It's a long story if you want to listen  
Then hold out your hand and open up your heart.  
I am a human being - You are a human being.*

Questions for a discussion circle:

- Do you know children who have fled from their own country?
- Have you read about refugees, heard of or seen them on TV?
- Do you remember how you felt then, what you thought?
- Have you ever read or heard anything about children from your own country who have had to flee?
- If you had to flee, what would you take with you and why?
- Why do people have to flee? Do you know what people have to do?

Read to the class, or have the pupils read out to the rest of the class, pieces about experiences of children and their parents who have had to flee their country because it had become unsafe for them there.

From a refugee-help organisation, find some reports from refugees with names of children and ask the pupils to select a refugee child to whom they can write a letter, as a group or individually.



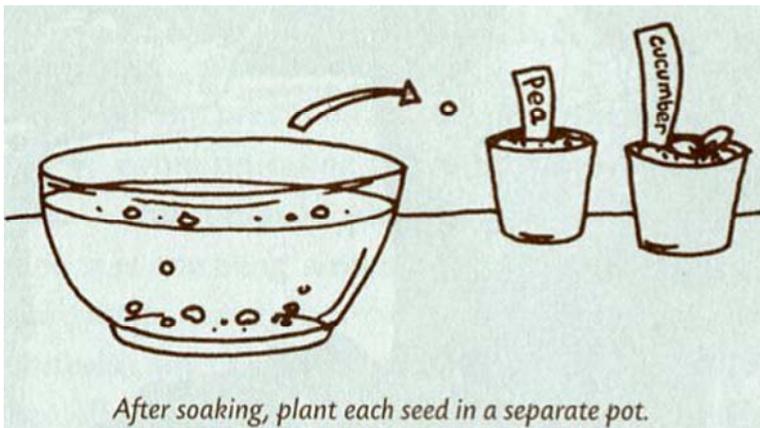
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## Travelling Plants

Like many naturalists, Darwin wondered how plants migrated to isolated islands. A plant native to one country might also be discovered growing naturally on an island hundreds or even thousands of miles away, even though it was not brought there by humans. Darwin guessed that some seeds floated across the ocean from one place to the next, either on their own or stuck in pieces of driftwood. Darwin was the first person to do experiments to see if seeds could stay in sea-water for a long time and still be able to sprout. He proved that even though most plants cannot survive in a salty environment for long, some seeds can float across the ocean and still sprout into plants. This is a smaller version of Darwin's experiment.

**What you need:** a cup or bowl salt, various kinds of seeds (good ones to use are peas, cucumber seeds, radish seeds, beans, or asparagus seeds), several small plant pots, with holes poked in the bottoms, soil.

Fill a cup or bowl with water, and sprinkle in enough salt until the water tastes noticeably salty-about one teaspoon (5 ml) per cup (240 ml). Drop two or three of each kind of seed into the water. Some might float; some might sink. Let the seeds



soak in the saltwater for two days, as if they were floating in seawater on their way to an island that is a two-day journey away.

After soaking, plant each seed in a separate pot. Together with other pots containing fresh seeds which haven't been soaked.

Fill your small plant pots most of the way with soil, and pat

it down. After the seeds have been in the water for two days, plant one seed in each pot, making sure to create labels showing which kind of seed is in which pot. Push each seed about a quarter inch (6 mm) below the soil level and smooth it over. Place the pots in a sunny location, preferably on a tray or dish. Water the seeds thoroughly at first, and every day sprinkle a little water to keep the soil moist (but not soggy). Wait for the seeds to sprout. It can take anywhere from two days to two weeks, depending of the type of seed; check the seed packets. How many of the seeds sprouted? All? None? Some? Did the salt poison them? It would only take a single seed floating to an island and successfully sprouting to establish that new kind of plant on the island, since the plant would then mature and drop seeds of its own.

