

SCIENCE ENGAGEMENT – INCLUSION – INTERCULTURAL DIALOGUE

Key competences and training resources for Intercultural Training
of Science Educators and Explainers



Promoting Intercultural Science Education for Adults

SCIENCE ENGAGEMENT – INCLUSION – INTERCULTURAL DIALOGUE

**Key competences and training resources for Intercultural Training of Science Educators
and Explainers**

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Welcome

Welcome to our Training Resource for Intercultural Training of Science Educators and Explainers!

We offer practical tools for staff members to develop or improve their Intercultural competences. This resource is a series of training modules that are designed for use in training workshops. They can be held separately or as a tailor-made training course with several (or all) modules combined.

What is the PISEA Project?

PISEA - Promoting Intercultural and Inclusive Science Education for Adults is a European Project which strives to make informal science learning and science engagement more inclusive and relevant for marginalised adults,

particularly for groups of migrants and refugees who face economic, social, educational, cultural or language barriers and discrimination.

The PISEA Project aims to make science engagement institutions places for adult science learning that incorporate an intercultural and inclusive perspective. It addresses science communicators and educators in addition to management and other staff and provides resources, such as guidelines and the sharing of good practise, training and multiplier events. The Project also directly addresses marginalised refugee and migrant groups as adult learners by piloting a number of science engagement activities.

For more information on the Project, please see <http://www.pisea.eu>.

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Why a Training Resource?

Inclusion responds to real societal challenge. As science engagement professionals operating within our sphere of influence, you can be agents of change.

The professional development of science engagement institution staff and the development of intercultural key competences are essential for the initiation of deep and lasting intentional change. Scientific educators, facilitators and other staff members already possess many skills that are also useful for working with new audiences. For specific aspects and skills, staff may require additional training. It is essential for all staff members to understand the relevance of working with marginalised groups and intercultural approaches, both in their own work and that of their respective institution.

Finally, inclusion is often thought as a mere question of accessibility, but we can and should offer another vision. The diversity of partnerships and teams themselves must be addressed. A diverse workforce will help to include diverse

perspectives and skills that contribute to the meaning and practice of an institution's inclusivity.

In addition to this resource we recommend that you consult the other PISEA Project resources, namely:

- The Set of Intercultural and Inclusive Key Competences for Professionals in Science Engagement, which provides an overview of relevant and helpful competences and skills for working with marginalised groups of adult migrants and refugees, and
- A collection of training modules on selected intercultural key competences for science engagement staff, in particular for facilitators and educator, which contains more training modules than this booklet.
- The Handbook on Pilot Science Engagement Activities, which was compiled by our Partners to test innovative formats, methods and activities while working with marginalised groups of migrants or refugees and share

examples of good practise and experiences in these activities.

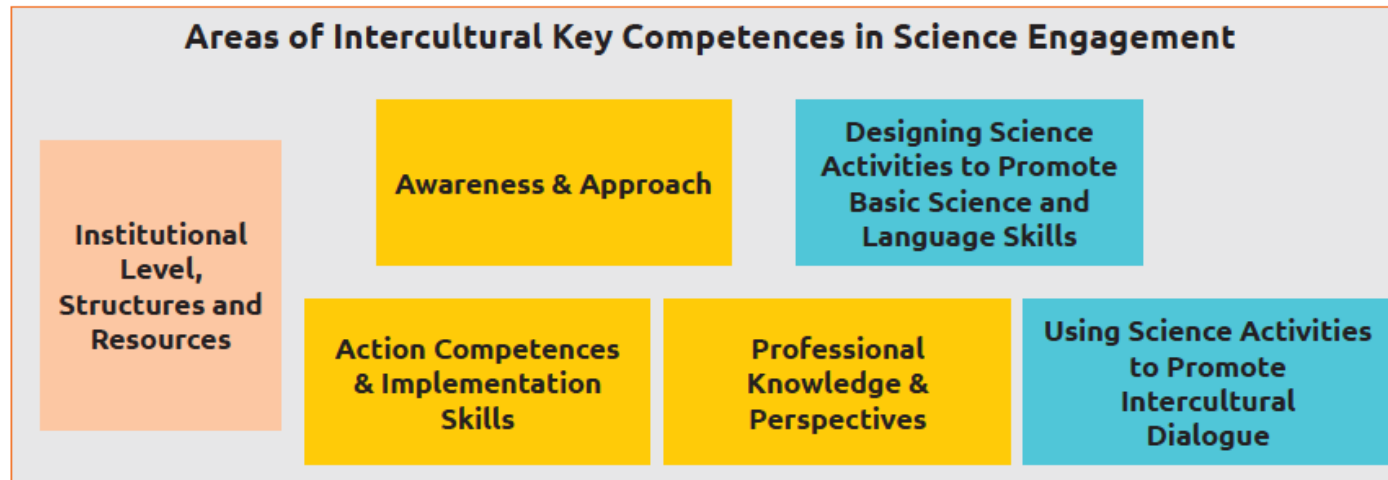
These resources can be downloaded from the EPALÉ website on European projects in adult education

(<https://ec.europa.eu/epale/>), as well as from the project website (www.pisea.eu)

Areas of Intercultural Key Competences in Science Engagement

Below five competence areas for people working in science engagement are outlined, and one area addressing the level of institution and institutional structures more specifically. In our brochure "Science Engagement – Inclusion – Intercultural Dialogue" you can find an overview of the rationale behind it,

a short description of the envisaged aim when tackling with this area, and a brief description of each of the identified key competences or skills.



The orange box addresses the institutional level and draws attention to necessary structural changes, resource management etc. in order to become a socially inclusive and interculturally sensitive science engagement institution.

The yellow boxes concern skills and competences of the staff of your science engagement institution, first of all educators and facilitators. But they can be relevant for other staff as

well, e.g. in exhibition or activity development, communication and management.

The blue boxes focus on two fields, where informal science learning or science engagement activities can play a major role with view to intercultural and social inclusive science

education: using science activities to promote basic science and language skills and promoting intercultural dialogue through science activities.

How to Use the Training Resource for Intercultural Training of Science Educators and Explainers?

Each training module aims to promote the respective professional competences defined in the key competences.

Each training module includes:

- Learning aims
- Duration
- Level of complexity
- Description of facilitator role
- Delivery process

Trainer's Prerequisites

Before starting the training it is essential that the trainer:

- Consult cultural, social and historical data, and
- Checks his/her own prejudice.

During training an atmosphere of trust must be established, so take care to be vigilant of interactions between yourself and trainees and trainees themselves and pay particular attention to dominant/dominated positions, majority/minority... etc., because the context of communication is not neutral.

Aside from using this Training Resource you must regularly evaluate your work and peer support.

A Haiku of Value

Source: Adapted by Ellinogemaniki
Agogi from the Enquiring Classroom
Erasmus + Project

Objective of the activity: To experience the difficulty in explaining the values that we all too often think we know the meaning of, while offering the strength found in poetic language and joint effort.

Time: 15-30 mins

Complexity: ★★

Material needed:

- You need paper, pencils and value cards (smaller cards on which values are written on one side while the other remains blank), and

Facilitator role: To create a calm atmosphere, issue instructions and facilitate a discussion.

Process:

Decide which values to work with and make value cards.

Prepare the following instructions, either on a board or on a white board, so that everyone can see the instructions throughout the exercise:

- Line 1: one word, a noun, which describes what the poem is about (for example the values of freedom, equity or inclusion),
 - Line 2: two words, adjectives, which describe what something is like...,
 - Line 3: three words, verbs, which describe what this value does...,
 - Line 4: four words, i.e. a sentence, that express a feeling (i.e. your relationship to your interpretation of the value), and
 - Line 5: one word, the same word as in Line 1 which, in this instance, is a metaphor for the value. Go through this with the participants and explain what a noun, an adjective, a verb and a synonym are by giving explanations and examples.
- Divide the participants into small groups, preferably groups of three.
- Hand out one piece of paper and one pencil to each group,

- A PowerPoint projector and screen.
- Put the instructions listed above on a board or whiteboard and explain the exercise,
- Let each group choose a value card (values face down),
- Give a suitable amount of time for the group exercise (approximately 10 minutes), and
- Exhibit and discuss. Place different haikus on the wall and let each group read their poem aloud. Discuss both the poetic language used as well as the values it represents.

Communication Map

Source: París Aznar and Irene Lucas (Colectivo Improspañol Vienna – Corridor Breaks projekt)

Objective of the activity: To visualise all the spoken languages in the group and the possible 'bridges' between the languages for translation; visibility for the existence of multilingualism in any group of people

Time: 30-45 mins

Complexity: ★

Material needed: a big piece of paper on the floor (at least 2 flipchart-rolls together), flipchart markers

Facilitator role: To explain the exercise, help participants draw their language-islands, ask questions and include everybody.

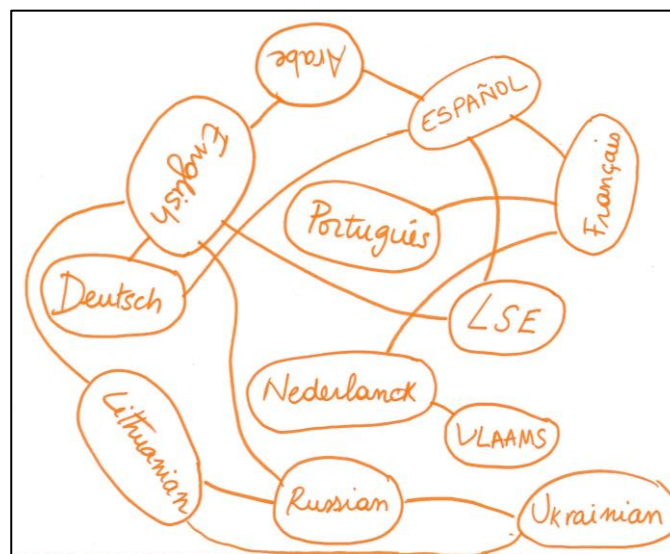
Process :

The participants gather in a circle around a big paper on the floor; the facilitator explains the goal: to draw a map of all the languages spoken in the group.

One person starts writing all the languages on the paper that she/he speaks/understands and draws bridges between those languages. Then another person adds the missing languages that she or he speaks and draws connection-lines/bridges between all the languages that this persons understands, including those already written on the paper.

It can be languages, dialects, variations of languages etc., everything that the participants consider relevant for themselves.

This goes on until all the languages spoken by each single person are written on the paper. In the end, the map can look more or less like this:



The role of the facilitator is to make sure that everybody can express themselves and feel represented on the map.

At the end, all the participants stand on the language-islands where they feel the 'safest' (their mother tongue or most spoken language).

The goal is to not only show the richness of languages in the group, but also visualise for everybody where they can get support and translation if they don't understand anything. So, the objective of the bridges between the language-islands is to visualise possible translators for every language.

If, for example, the common language is English, but not everybody understands it perfectly or prefers to express themselves in their mother tongue, this map helps to find support for everybody.

Identity Molecule

Source: Adapted from a programme developed by Yavilah McCoy.

Objectives of the activity: Reflect your own identity and roles, investigate how a perceived shared identity can in fact contain significant diversity and reflect about your own 'cultural identity'

Time: 45-60 mins

Complexity: ★

Material needed:

- 'Identity Molecule' worksheets and a pinboard or whiteboard,
- a big white poster, and
- pins or clue

Facilitator role: To give instructions and explain, present, distribute and facilitate the game.

Process:

Part 1: Who I Am

Explain to participants that this activity is designed to examine assumptions we might make about relationships between different aspects of identity and community... for example:

Each of us carries with us different experiences, affinities and core values that shape how we present ourselves to the world, how we see others and what we bring to a community, and one particular aspect of our identity – the one we have in common with others in that community – is often central to how we interact. However, the expression of that shared identity is still shaped by our individual experiences and other aspects of who we are.

Distribute copies of the 'Identity Molecule' worksheet to each participant. Explain that the sheet will be a map of their individual identities. In the centre of the molecule, participants should write their names. Then, instruct the participants to think about their own

identities/roles and the key aspects that make up 'you are'. They should think of their 5 most important identities or roles.

Model the activity for participants with your own identity molecule – including identity categories such as gender, ethnicity, education level, etc. Give the participants no more than 10 minutes for this part of the activity.

While the participants are filling out their worksheets, prepare a big white poster on a pinboard or whiteboard.

Once the participants have completed their 'Identity Molecule' worksheets, ask them to share their molecules. As the participants share their identity categories, they should pin them on the wall and draw lines to the 'Identity Molecules' between the identities/roles they have in common with other participants. At the end, you should have a big picture of diverse molecules with a lot of lines that connect them together.

Now have them to consider the following questions in pairs for five minutes:

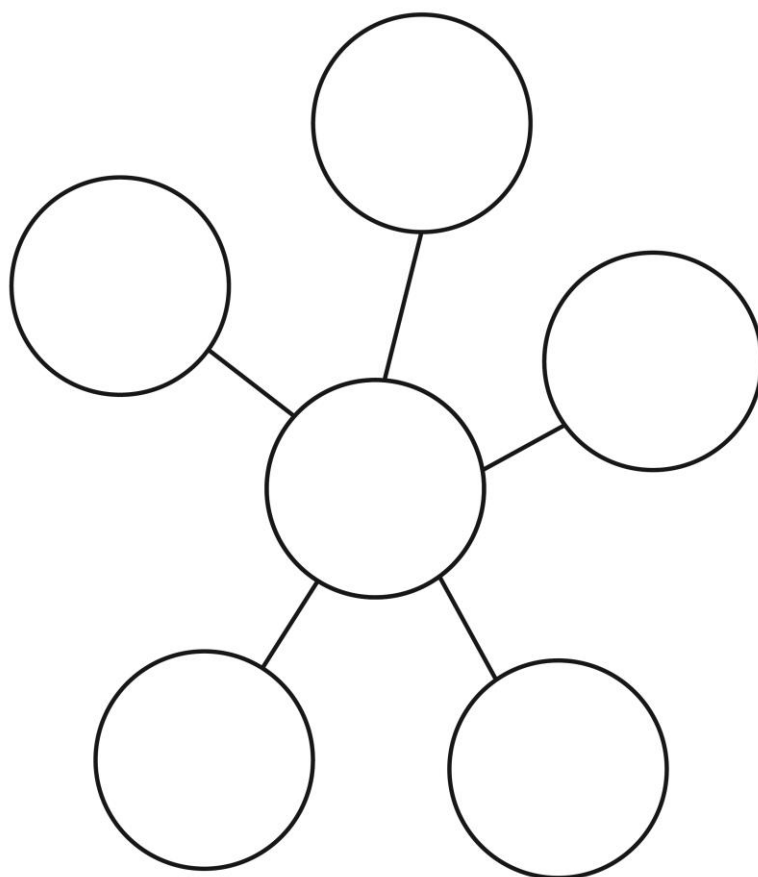
- What aspects of your identity make you the person that you are?
- How do the other aspects of your identity interact with your 'culture'?
- Based on the other aspects of your identity, what assumptions might you make about others?
- How might the assumptions that you make based on your experiences create

unintended barriers when interacting with others who are part of 'another culture'?

Bring the group back together and ask for volunteers to respond to each question.

Finally, ask the group to consider the community Identity Molecule they created. Are there other identity categories or groups that might be missing, e.g. sexual orientation, ethnicity, class, etc? What identities do they have in common?

Identity Molecule – Handout: Identity Molecule



Living Values

Source: Adapted by Ellinogemaniki Agogi from the Enquiring Classroom Erasmus + Project

Objective of the activity: Learn how to dialogue and accept other people's opinions.

Time: 20-30 mins

Complexity: ★★

Material needed:

- A coloured card of good quality (not too bright) with the following concepts written on one side (you need a set for each of the groups): Tolerance, Solidarity, Justice, Freedom, Integrity, Equality, Dignity, Tolerance and Responsibility, and
- A timer.

Facilitator role: To create a calm atmosphere, give instructions and facilitate a discussion.

Process:

1. Divide the participants in groups of 4-6, all sitting in a circle facing one another.
 2. A facilitator should explain the process.
 - Each person has 1-3 mins (decide on the exact amount of time in advance but perhaps begin with one minute) to speak about their experience or through a story about a value.
 - The circle moves clockwise.
 - If someone chooses not to speak, everyone remains in silence until their time runs out, whereupon the next person should speak.
 - No one should speak more than their allotted time.
 - No one should interrupt or discuss the input of another person.
 - If someone becomes emotional or upset: allow a person to simply be unless they become distressed.
 - When everyone has finished, the group may choose to do another round on the same concept.
- Place the card down. Everyone in the group should reflect on the same value.
- After the first round you may, as a group, decide to choose a different concept to continue with, reflect on the same concept or choose a different concept each time a person speaks.

- Don't ask for feedback: allow individuals to volunteer their own experiences whilst asking them to respect the process and not disclose the stories of others.

This activity will allow explainers to deepen and develop an appreciative understanding of the complexity of values and thus make themselves more open towards their audiences. It also cultivates the ability to simply listen to the perspectives of others and understand how the rich traditions and lives of others influence their understanding of these values. It finally allows everyone to experience what it is to have one's own perspectives and ideas listened to and to have one's own voice and story valued

Migratory Objects: Working with Refugees/Migrants as Co-explainers

Source: based on the TRACES Project
'Raconte-moi les objets migrants'

Objective of the activity:

To co-facilitate an intercultural and intergenerational workshop with refugees/migrants

'Migratory objects' activity allows participants from different cultures to exchange and promote their knowledge and experiences, around the science, functioning and history of everyday objects from various countries and regions. The participants are thus led to discover and understand the scientific and technical interest of real objects and rely on their knowledge to exchange between cultures, ways of life and learning together

Time: 3 x 60-75 mins

Complexity: ★★

Process:

WORKSHOP 1

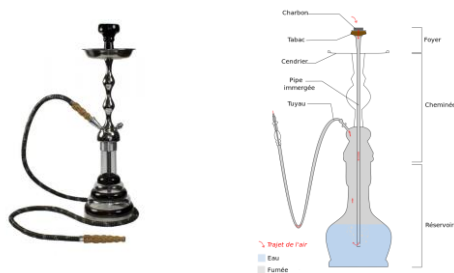
Setting: 3 tables placed in a U in the centre of the room so facilitators can move inside the U. Participants should sit around the U on chairs.

1. Presentation of the workshop and its rules:

- You all have knowledge to share with others: take the opportunity you have during this workshop to share what you know, and discover what others know.
- To do this, you have to listen and take the time to enjoy the stories told by other participants
- Silence times are part of the workshop: respect them
- Do not cut others short: your turn will come, patience
- This workshop is not a knowledge contest: you can explain things, but you can also tell stories. Both are equally important.
- Facilitators do not know everything! But it guarantees the respect of the distribution of the word and the quality of the exchanges in the group.
- It is possible to manipulate and touch objects only when talking about them.
- You are participants of different generations, cultures: your habits and ways of doing things may be different. Respect them! Discover them!

Material needed: Migratory Objects

An example of a proposed object, the narghile, meets both the criteria of the project and addresses various scientific and technical concepts: combustion, air and water pressure, depression and smoke formation. The drawings below allow a visualisation of these different scientific concepts.



2. Ask what object they want to start with. Use the following questions to help the discussion:

What are the rules? What scientific concept is behind this object? Is it old? When does it date from? Is it still used? Who has already used it? Do you want to test it? Has it been replaced by newer objects or technologies today? Do you have any memories related to this object? What stories can you tell about this object? If you feel anecdotes about an object are running out, invite participants to choose a new object.

3. Take the time to take a tour of the impressions and feedback on the workshop: what you liked/what you learned/what you did not like or what you would like to improve/what this workshop was changed at home. Remember to note what the participants say.

4. Ask participants to come with their own objects next time.

WORKSHOP 2

Do the same with participant object. You can also decide to purchase objects, according to criteria defined upstream (size, weight, price, operating status, scientific and technical interest).

WORKSHOP 3

Decide the process and the target of your co-creation activities.

One step forward

Source: Adapted by TRACES from a Council of Europe Activity

Objective of the activity: To raise awareness about inequality of opportunity.

Time: 45 mins

Complexity: ★ ★

Material needed:

- Printed role cards,
- A printed list of situations, and
- An open space.

Facilitator role: To create a calm atmosphere, give instructions and facilitate a discussion

Process:

1. Randomly give each participant a role card and tell them to keep it to him or herself and to not show it to anyone else.

2. Now ask them to begin to get into this role. To help, read out some of the following questions, pausing after each one, to give people time to reflect and build up a picture of themselves and their lives:

'What was your childhood like'? 'What sort of house did you live in'? 'What kind of games did you play'? 'What sort of work did your parents do'?

'What is your everyday life like now'? 'Where do you socialise'? 'What do you do in the morning, the afternoon and the evening'?

'What sort of lifestyle do you have'? 'Where do you live'? 'How much money do you earn each month'? 'What do you do in your leisure time'? 'What you do on your holidays'?

'What excites you and what are you afraid of'?

3. Now ask people to remain absolutely silent as they line up next each other (like on a starting line).

4. Tell the participants that you are going to read out a list of situations or events. Every time they can answer 'yes' to a statement, they should take a step forward. Otherwise, they should stay where they are and not move.

5. Read out the situations one at a time. Pause for a while between each statement to allow people time to step forward and to look around to take note of their positions relative to each other.

6. At the end invite everyone to make a note of their final positions. Then give them a couple of minutes to come out of their roles before debriefing in plenary.

7. Debriefing and evaluation:

Start by asking participants about what happened and how they feel about the activity and then go on to talk about the issues raised and what they learnt.

- How did people feel stepping forward - or not?
- For those who stepped forward often, at what point did they begin to notice that others were not moving as fast as they were?
- Did anyone feel that there were moments when their basic human rights were being ignored?
- Can anyone guess the other roles (Let people reveal their roles during this part of the discussion)?
- How easy or difficult was it to play the different roles? How did they imagine what the person they were playing was like?
- Does the exercise mirror society in some way? How?
- Which human rights are at stake for each of the roles? Could anyone say that their human rights were not being respected or that they could not access them?
- What initial steps could be taken to address inequalities in society?

One Step Forward – Handout: Role cards

You can localise and create your own cards

You are an unemployed single mother.	
You are the son of a Turkish immigrant who runs a successful fast food business.	
You are an Arab Muslim girl living with your parents who are devoutly religious people.	
You are a disabled young man who can only move in a wheelchair.	
You are a 17-year-old Roma girl who never finished primary school.	

You are a 22-year-old lesbian.	
You are an unemployed university graduate waiting for the first opportunity to work.	
You are a 24-year-old refugee from Afghanistan.	
You are a non-documented migrant from Mali.	
You are the 19-year-old son of a farmer in a remote village in the mountains	
You are a retired worker from a factory that makes shoes	

One Step Forward – Handout: Situations List

Daily life situation:

- You have never encountered any serious financial difficulty.
- You have decent housing with a telephone and television.
- You feel your language, religion and culture are respected in the society in which you live.
- You feel that your opinion on social and political issues matters and your views are listened to.
- Other people consult you about different issues.
- You are not afraid of being stopped by the police.
- You know where to turn for advice and help if you need it.
- You have never felt discriminated against because of your origin.
- You have adequate social and medical protection for your needs.
- You can go away on holiday once a year.
- You can invite friends to dinner at your home.
- You have an interesting life and you are positive about your future.
- You feel you can study and follow the profession of your choice.
- You are not afraid of being harassed or attacked in the streets or in the media.
- You can vote in national and local elections.
- You can celebrate the most important religious festivals with your relatives and close friends.
- You can participate in an international seminar abroad.
- You can go to the cinema or the theatre at least once a week.
- You are not afraid for your children's future.

- You can buy new clothes at least once every three months.
- You can fall in love with the person of your choice.
- You feel that your competencies are appreciated and respected in the society where you live.
- You can use and benefit from the Internet.
- You are not afraid of the consequences of climate change.
- You are free to use any site on the Internet without fear of censorship.

Science engagement situations:

- You have access to basic information about activities and workshops offered near to where you leave or in the places you visit every day.
- When visiting a science centre or participating in science communication activity, the visit and activities are adapted to your mobility.
- When visiting a science centre or participating in science communication activity, you understand the language and words used in the proposed activities.
- When visiting a science centre or participating in science communication activity, you are certain that you will see people of your race/ethnicity.
- When visiting a science centre or participating in science communication activity, you are certain that you will see people from your socio-economic background.
- When visiting a science centre or participating in a science communication activity, you are sure that the knowledge of people from your social class will be positively represented.
- When visiting a science centre or participating in a workshop, you are sure that the staff will represent your race or social class.
- When visiting a science centre or participating in science activity, you can have a critical point of view without thinking that it is 'a problem of culture or integration'.
- Before leaving a science centre, you will be able to buy something in the museum shop where you can afford a coffee or a sandwich at the exit.

Stens Puzzle

Source: Adapted by Navet

Objective of the activity: To collaborate and raise awareness of one another's problems-solving strategies.

Time: 30 mins

Complexity: ★★

Material needed:

- Puzzles made of pictures that are similar to each other. The size of the puzzles should be about the size of a poster (i.e. not smaller than 30*40 cm). For five groups you need four puzzles, and
- Papers that cover the puzzles.

Facilitator role: To create a calm atmosphere, give instructions, and facilitate a discussion after the activity

Process:

Use an open space so everybody can see each other.

Divide the big group of people into smaller groups (3-4 persons).

The amount of groups should be one more than the amount of puzzles.

Mix the puzzles and divide them in piles (there should be the same amount of piles as the number of groups).

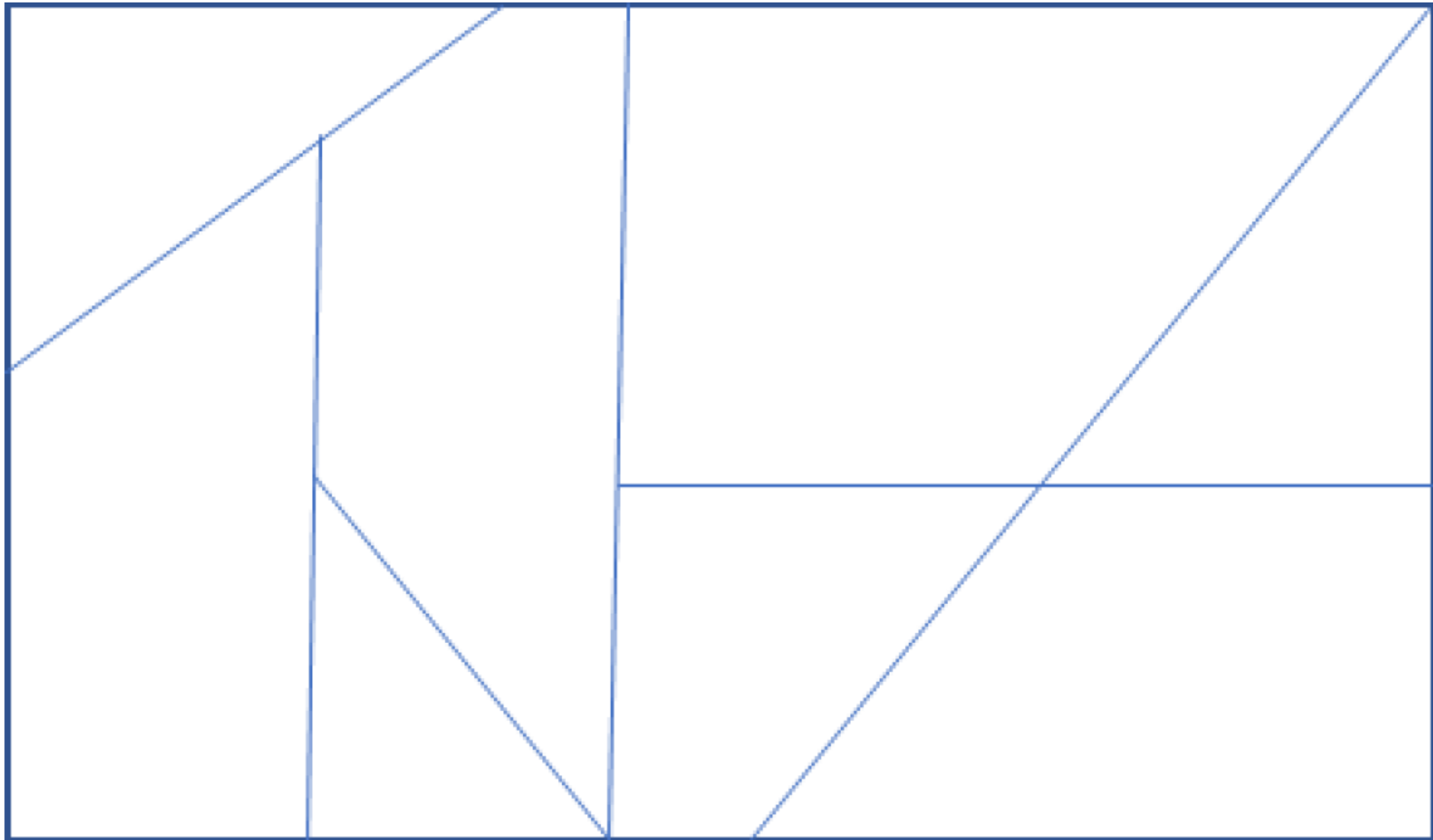
Put the pieces upside down and cover them with something until it's time to get started.

You should instruct each group to solve this problem as a group and without talking to each other.

Questions to discuss afterwards:

- How many groups were there and how many puzzles did we solve?
- How were the groups defined?
- What was your role in your group?

Stens Puzzle – Handout: Puzzle



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