

**Idea** for solving a scientific problem through an animal experiment



Which animal species is the most suitable?

**Game** to decide which animal species should be used for the experiment

- Objective discussion of the advantages and disadvantages of individual animal species through the distribution of **roles** (e.g. §15 commission, animal welfare officer, test supervisor, test performer).
- Individually adaptable and expandable to each working group.

**Result:**  
The most suitable animal species is found and the arguments can be used in the project proposal!





# Game instructions:

## Day 1:

1. the rules of the game are explained. The case card on which the planned experiment is described is discussed.



2. each player receives a role card on which the characteristics of the role are described in detail and familiarizes themselves with their new role.

Case card

**How can adult lung flukes be produced effectively?**  
**Case example:** You would like to produce adult lung flukes on a larger scale in order to isolate surface proteins. With these surface proteins, which have an antigenic effect, they want to develop diagnostic tests with high sensitivity and specificity to reliably diagnose the disease in humans. To do this, an animal must be infected with metacercariae. As these migrate through the body before maturing into adult flukes, especially into the lungs, but can also be found in other organs, the animals must be euthanized and completely necropsied in order to isolate the adult flukes.

Preselection of animal species:  
- Metacercariae must mature into adult flukes  
- Must have lungs

Case number calculation:  
Expected number of adult flukes is different in different animal species. As natural hosts pigs, dogs and cats produce the highest amount of adult flukes.

Acute Fasciolosis: *Stephanofora* Plot in *Encyclopedia of Food Safety*, Elsevier Science, 2014

**Task:**  
Become aware of your role and familiarize yourself with the planned experiment!

## Role Cards

### Detailed information on the role of the trial management:

**Planning the experiment:** The principal investigator is responsible for the design of the animal experiment, including the formulation of the hypothesis to be tested, the development of a suitable study design and the selection of appropriate methods and models.

**Ensuring compliance with ethical and legal guidelines:** The investigator must ensure that the experiment is conducted in accordance with relevant ethical guidelines and legal requirements. This includes adherence to the 3Rs principle (reduce, replace, refine), ensuring animal welfare and compliance with standards of good scientific practice.

**Monitoring and supervision of those conducting the experiments:** The trial supervisor has the task of supervising and monitoring the trial performers to ensure that the trial is conducted correctly.

**Data management and reporting:** The principal investigator is responsible for managing the data collected and reporting the results of the experiment.

# Game instructions:

## Day 2:

4. discuss the pros and contras lists together with the whole group: first the pros and then the contras column for each animal species and each criterion is discussed individually. The game leader/moderator notes the arguments on the pros and contras card. There are no opponents. Everyone is either on the pro or contra side. Everyone should represent their role in the best possible way. All arguments are noted down. Example: Advising the pro side for e.g. criterion 3 “Is the animal species culturally acceptable?”: Here, as an aid, the statement could be started with: The mouse (gerbil, hamster, primate) is culturally acceptable because... . For the side of the contra points, the beginning of the sentence can be changed to: The mouse (gerbil, hamster, primate) is NOT culturally acceptable because... .

The image displays five overlapping cards, each titled "Pro and Contra List" followed by a criterion number. Each card has a header with "Species" and "Rat" and a "Pro" column. The criteria are:

- 1. Criterion: Costs, effort, availability**
- 2. Criterion requirements animal species: Are there specific requirements for the animal species due to the experimental design? (Genetics, size, physiology, behavior, etc.)**
- 3. Criterion of Justifiability: Is the animal species culturally justifiable?**
- 4. Criterion transferability: Is transferability to a target species possible?**
- 5. Criterion Capacity for suffering: What is the capacity for suffering, pain and permanent damage for the selected animal species in relation to the planned procedures?**

Each card also includes a "Contra" column and a footer that reads: "Sub-items can be defined to standardize the discussion for all animal species." A central yellow starburst contains the following text:

**Task:**  
Discuss and write down pros and cons for each criterion and species

# Game instructions:

## Day 2:

4. When the list is complete, each player adds up the points relevant to their role. Each player can decide for himself that all arguments are relevant or leave out arguments that are not relevant. Everyone decides for themselves according to their role. Highlighted here in color:

Example evaluation pro and contra list

3. Criterion: Is the animal species culturally justifiable?

Species Rat		Species Gerbil		Species Cat		Species Primate	
Pro	Contra	Pro	Contra	Pro	Contra	Pro	Contra
Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1
Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2
Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3
Argument 4		Argument 4	Argument 4	Argument 4	Argument 4	Argument 4	Argument 4
Argument 5			Argument 5			Argument 5	Argument 5
						Argument 6	Argument 6

3. Criterion: Is the animal species culturally justifiable?

Species Rat		Species Gerbil		Species Cat		Species Primate	
Pro	Contra	Pro	Contra	Pro	Contra	Pro	Contra
Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1	Argument 1
Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2	Argument 2
Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3	Argument 3
Argument 4		Argument 4	Argument 4	Argument 4	Argument 4	Argument 4	Argument 4
Argument 5			Argument 5			Argument 5	Argument 5
						Argument 6	Argument 6

The points for Pro are entered as a positive number in the top line of the scoring card for the corresponding animal species:

Scoring Card:

Trial Management: The number of points per criterion is calculated from the colored markings on the pro/contra lists. The value can also be negative if more contras were found than pros.

	Criterion 1		Criterion 2		Criterion 3		Criterion 4		Criterion 5		
	PRO	CONTRA	PRO	CONTRA	PRO	CONTRA	PRO	CONTRA	PRO	CONTRA	
Points from pro/contra-list Rat					5	-1					
					4						
Points from pro/contra-list Gerbil					3	-3					
					0						



The points for Contra are entered as a negative number on the scoring card for the corresponding animal species. Both values are then added together.

This is the procedure for all 5 pros and contras lists, so that the points for an animal species can be added up for all 5 criteria.

# Game instructions:

## Day 2:

When the players' scoring cards have been completed, the total points for the individual criteria are added together to give a total score for the role for an animal species.

Scoring Card:

**Trial Management** The number of points per criterion is calculated from the number of arguments in the pro/contra lists. The value can also be negative if more contras were found than pros. You can decide for yourself that all arguments are relevant or leave out arguments that are not relevant. Decide according to your role.

	Criterion 1		Criterion 2		Criterion 3		Criterion 4		Criterion 5		
Points from pro/contra-list Rat	4	-1	1	-2	5	-1	1	0	1	-1	Σ 7
Points from pro/contra-list Gerbil											Σ
Points from pro/contra-list Cat											Σ
Points from pro/contra-list Primate											Σ

The total number of points is transferred from the scoring card to the evaluation form. This task is performed by the game master or moderator.

Evaluation of total score	Rat	Gerbil	Cat	Primate
Points trial management				
Points Experimenter				
Points Animal Welfare Officer				
Points \$15 Commission				
Points Experiment Planner				
Points Animal Welfare Committee				
Points Veterinary Service				
Points Higher Institution				
Points Authorities				
Total				

The points of all roles per animal species are added up to a total score per animal species. The animal species with the most points is the "winner"!

**Task:**  
Evaluation and discussion of the results!

Game instructions:

Day 3:

Discussion of the results: The game master presents the overall result.

Evaluation of total score	Rat	Gerbil	Cat	Primate
Points trial management	7	15	10	5
Points Experimenter	10	10	6	1
Points Animal Welfare Officer	7	7	7	0
Points \$15 Commission	5	4	4	-3
Points Experiment Planner	10	13	14	-3
Points Animal Welfare Committee	8	5	4	-4
Points Veterinary Service	6	8	10	-4
Points Higher Institution	12	8	14	2
Points Authorities	4	13	4	5
Total	69	79	73	-2

- The result is discussed and debated.
- The main arguments for the species with the most points are compiled and summarized for the project application.

**Result:**  
The most suitable animal species has been found and the arguments can be used in the project application!