

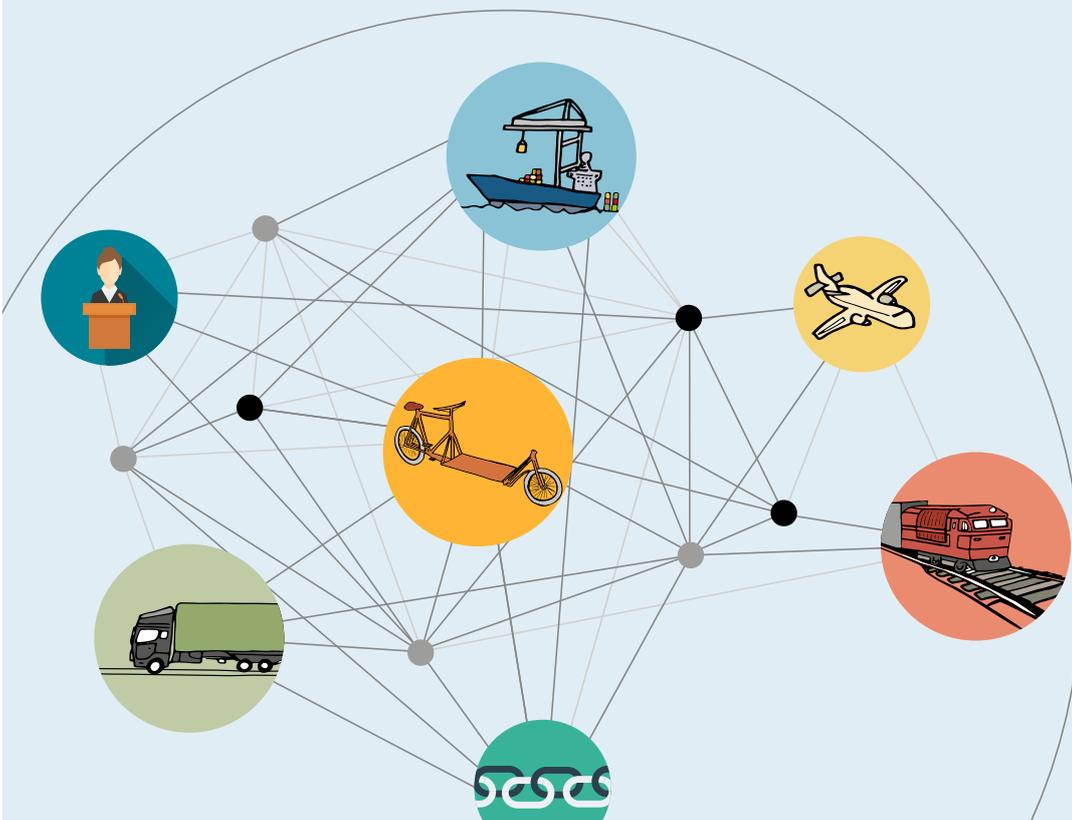
# Pro-DEENLA

LEUPHANA  
UNIVERSITY OF LÜNEBURG

Steinbeis Innovation Center  
Logistics and Sustainability

## “COMBINED TRANSPORT!?” LEARNING MODULE

NOTES FOR  
TRAINEES/STUDENTS



SPONSORED BY THE



**bi**bb Federal Institute for  
Vocational Education  
and Training

# “COMBINED TRANSPORT!?”

## LEARNING MODULE

All stakeholders are in agreement as to what constitutes the challenges facing the transport and logistics sector – environmental pollution, congested roads, transport needs that continue to rise, and ambitious climate goals. But no final clarity exists with regard to how these challenges are to be tackled. Combined transport is considered to be one possible way forward. Although this notion may seem to be brand new at first glance, a closer look will reveal that combined transport has been an object of discussion for over 20 years. The federal government recently adopted new funding guidelines with the aim of strengthening combined transport. Ultimately, however, the companies themselves decide which modes of transport they prefer. In order to enable

you to understand or make such decisions, the following learning tasks begin by looking at the idea of combined transport. Once you have given some thought to the advantages and disadvantages of combined transport, you will then use a board game to consider the specific characteristics of the individual modes of transport. You will finish by taking part in a simulation in order to view the concept of combined transport from a traffic policy perspective. This will involve entering the world of lobbying, and you will have the chance to use the knowledge of the basic principles of combined transport that you previously acquired as you present your arguments.



Tasks to  
complete  
individually

**Before planning combined transports yourself, you should begin by finding out about combined transport as an alternative concept.**

### TASKS:

1. Read the information text about combined transport ([Material 1](#)).
2. Then answer the following questions in bullet point form:
  - a. What does the concept “combined transport” mean?
  - b. Why is combined transport encouraged and funded?
  - c. What varieties of combined transport are mentioned?
  - d. Which challenges could arise as a result of the use of combined transport?
3. Create your own chart to record your results. You may find [Note 1](#) helpful.

## WHAT IS COMBINED TRANSPORT?



Combined transport makes use of the respective advantages offered by the various means of conveyance and combines these benefits to form a chain which is both cost-effective and environmentally compatible. The terms “combined transport” and “intermodal transport” are often used as synonyms. Strictly speaking, however, intermodal transport refers to goods in the same unit (e.g. a container, semi-trailer, or full lorry), which are carried on two or more modes of transport. Combined transport, on the other hand, represents a sub-group of intermodal transport in that the main leg takes place via ship or rail whilst a lorry is used for the start and finish of the route. Combined transport is specifically defined by the United Nations as being a type of “intermodal transport where the major part of the [...] journey is by rail, inland waterways, or sea, and any initial and/or final legs carried out by road are as short as possible” (UN/ECE 2001, p. 18). According to the German Promotion Centre for Combined Transport (SGKV), the various definitions of combined transport all have three crucial characteristics in common:

1. Goods are transported in a standard loading unit within an intermodal chain.
2. There is at least one switch between road, rail, inland waterway, or maritime routes.
3. A systemic approach is in place to make changes of modes of transport easier.

Combined transport can be divided into various categories depending on the way in which it is structured. One possible approach is to split it into continental and intercontinental transport. Whereas intercontinental transport mainly uses sea-going vessels and subsequent transportation of the ISO containers by barge, lorry or rail, continental inner-European transport is dominated by the transport of goods via swap bodies or semi-trailers. These can, for example, be loaded from a lorry onto the railway and subsequently be loaded back onto a lorry. A distinction is also drawn in continental transport between accompanied and unaccompanied transport. Accompanied transport includes, on the one hand, the terms “roll-on/roll-off transport”, i.e. when the driver boards and leaves the ship with the lorry. On the other hand, the term “rolling highway” is used when referring to a combination of road and rail. In the case of unaccompanied transport, on the other hand, goods are loaded onto semi-trailers only.

From a business management point of view, the supposition might be that every switch between modes of transport, especially on continental routes, would entail extra costs and additional risks. However, combined transport can be seen as offering numerous advantages if we take an overall societal perspective of freight transport rather than adopting an isolated operational point of view. The Federal Ministry of Transport and Digital Infrastructure has adopted combined transport funding guidelines for the years from 2017 to 2021. Objectives include achieving more efficient structures at handling facilities. The aims here are to enhance networking between modes of transport and to integrate the railways and waterways more closely into the transport chain. This can free up space for freight transported by road and thereby reduce transport-related emissions and noise pollution. In addition to being better for the environment, combined transport can also create economic benefits. Costs of mass modes of transport are generally lower. The 44-tonne regulation, for example, also means that vehicles deployed on an initial or final leg or for the journey to the nearest terminal may operate at a total weight of 44 tonnes. Exceptions are also in place regarding bans on weekend driving, and tax breaks and toll reductions are available, too.

Transport and logistics companies should therefore examine the idea of combined transport carefully since it does not merely deliver advantages from an ecological perspective.

### SOURCES:

**Bundesministerium für Verkehr und digitale Infrastruktur [Federal Ministry of Transport and Digital Infrastructure] (2018):** *Kombinierter Verkehr. Umweltschonend, verkehrssicher, wirtschaftlich [Combined Transport. Environmentally friendly, safe, cost-effective]. Available online at: <http://www.bmvi.de/SharedDocs/DE/Artikel/G/kombinierter-verkehr.html>. As at: 01.03.2018.*

**Economic Commission for Europe (UN/ECE) (2011):** “*Terminology on Combined Transport*”, United Nations, New York/Geneva.

**Kummer, Sebastian; Schramm, Hans-Joachim; Sudy, Irene (2010):** *Internationales Transport- und Logistikmanagement [International transport and logistics management]. Vienna: Facultas.*

**SGKV – Studiengesellschaft für den Kombinierten Verkehr e.V. [German Research Centre for Combined Transport] (2018):** *Der kombinierte Verkehr [Combined transport]. Available online at: [www.sgkv.de/en/](http://www.sgkv.de/en/) As at: 01.03.2018.*

**United Nations (UN/ECE) (2001):** *Terminology on Combined Transport. New York and Geneva.*



## TIPS FOR CREATING A CHART

Creating a chart offers an opportunity to present links and dependencies in order to provide a clear summary of a text. Graphics can be created using different computer programmes (e.g. Word or PowerPoint). Within a business context, they mostly comprise geometric forms which contain key points. It is, however, possible to prepare a graphic without using a computer. You could, for example, simply draw your own chart. The advantage here is that your graphic will be unique, and anyone seeing it will be able to retain the information better. A conscious decision to choose certain colours and shapes will also mean that you consider the contents of your chart more carefully.



Tasks to  
complete  
individually

Now you will plan combined transports yourself.

### TASKS:

1. Read the text “On the trail of chocolate” ([Material 2](#)).
2. Then name the individual substances contained in the product and the distances these need to travel.  
Use the Internet to find out approximately how many kilometres are involved.
3. Use the respective mass and kilometre indications to calculate the so-called tonne kilometres (tkm). [Note 2](#) may be helpful in this regard.



## TIPS FOR THE CALCULATION OF TONNE KILOMETRES

Tonne kilometres are the unit of measurement used to measure transportation performance. One tonne kilometre (1 tkm) is the product of one tonne (1 t) of transported goods and one kilometre (1 km) of distance covered. One tonne kilometre is thus the transport of one tonne of goods across a distance of one kilometre.

## ON THE TRAIL OF CHOCOLATE



The individual components of a bar of chocolate will have undertaken a long journey before you can enjoy your first bite. To be precise, the origins of the chocolate go back about five and a half years. Think about all the things that have happened in your life during this period. Doubtless you will have experienced quite a lot, right?

About five and a half years ago, a cocoa tree was planted in Sao Tomé. The fruits of this tree are called cocoa beans, and these are what lend chocolate its unique taste. Once the cocoa tree has finally borne fruit, a further six months will elapse before these can be harvested. After their initial processing near the plantation, our beans (one tonne) are now starting to make their way towards us:

They are gathered together with a large number of beans from other plantations and sent off to Hamburg in sealed containers. Upon arrival, the beans are checked and then stored for up to one year. The journey then continues. The beans are transported to many different factories for further processing. They are cleaned, roasted for up to 35 minutes, separated from their shells and then used to make various products such as cocoa butter, cocoa paste, and cocoa powder.

In this case, our beans (one tonne) travels to Berlin. Fortunately, Berlin is also the home of the chocolate factory. This means that the cocoa paste and cocoa butter do not need to undertake any more journeys. However, the other ingredients required to manufacture chocolate will now need to be delivered. These are milk and sugar. The milk for our chocolate (one tonne) comes from Salzburg. The sugar (one tonne) is from Rotterdam. These ingredients are now mixed together and poured into moulds. In the world of chocolate, this procedure is known as conching and may take up to three days. When the chocolate (three tonnes) has finally cooled, it just needs to be packaged before being dispatched from Berlin to a supermarket of your choice.

The big question now, however, is as follows. How can combined transport be deployed to structure the supply chain for this chocolate in an environmentally conscious way?



### TASKS:

4. Use the average values stated in [Material 3](#) to determine which modes of transport or combinations of modes of transport would be (1) the most cost-effective, (2) the most time-efficient and (3) the most ecological transport option for the respective legs.  
**Note:** it may not be useful to plan combined transport on some legs. You should therefore consider whether **one mode of transport** or **a combination of modes of transport** should be used on the various legs. The following rule of thumb will help: the economic and ecological advantages of combined transport as opposed to transport by lorry become clearly apparent from distances of 500 kilometres upwards (and may also apply at distances of less than 300 kilometres in some cases) (source: SGKV).
5. Present the values you have calculated in the form of a chart in order to provide a clear illustration of the three modes of transport or combinations of modes of transport for each leg (most cost-effective, most time-efficient and most ecological).
6. Think carefully about the reasons why you would opt for certain modes of transport or combinations of modes of transport on each leg.
7. Add information to your existing chart to demonstrate clearly the individual combination of modes of transport that you have chosen.
8. **Optional:** if other trainees have worked on this learning task as well as you, compare results to identify the decisions reached by others and their reasons for arriving at these choices.
9. Find out the extent to which your company offers combined transport, research the criteria it uses to select modes of transport and describe what its justification is.



*Tasks to complete in pairs or groups*



## SUMMARY OF KEY INDICATORS

KEY INDICATOR MEANS OF TRANSPORT	Average costs per tonne kilometre in EUR	Average speed in km/h	Average CO <sub>2</sub> emissions per tonne kilometre in g
Railway	0.11	38.125	33.4
Barge	0.023	5.21	33.4
Maritime bulk carrier	0.0047	26.22	7.4
Lorry	0.10	76.25	97.5



In order to apply combined transport in a useful way, it is necessary to look closely at the respective advantages and disadvantages of the modes of transport of road, rail, waterway, and air. Playing the game “Responsibility has the right of way” will put you at the controls of a lorry, goods train, barge, sea-going vessel, or aeroplane. At the end of the game, it will be revealed which means of transport is the fastest and which is the most sustainable. Or is it perhaps possible for one mode of transport to combine these two attributes?

Carry out the individual assignments, and you will quickly find that you have drawn up a systematic summary of the benefits and drawbacks of the four modes of transport.



Tasks to complete in pairs or groups

### TASKS:

#### Before the game:

1. Work as a team to prepare the board game by cutting out the templates and sticking them together [\(see Material 4\)](#).
2. Read through the rules as a group and discuss anything that may be unclear [\(see Note 3\)](#).  
**Please note:** the maximum number of people who can play at one time is four. If your learning group is bigger, the other participants will need to take on observer roles.
3. **For observers only:** read the task assigned to the observer [\(see Note 4\)](#).

#### During the game:

4. Embark on your trip! Play the game together. Enjoy the ride!  
**For observers only:** interpret the course of the game and make notes in accordance with the task you have been assigned.

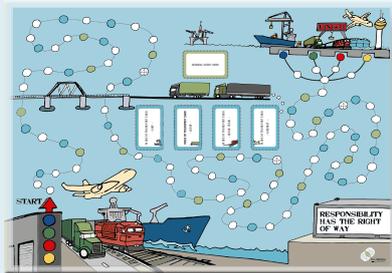
#### After the game:

5. Reflect together on the way the game has gone.  
**If observers have taken part**, they should be the first to report and present their results. The players then add their own impressions.  
**If no observers have taken part**, discuss the course of the game from your players' perspective. You may wish to use the table provided to note the benefits and drawbacks of the different modes of transport that are mentioned [\(see Material 5\)](#).
6. Discuss together whether there are any further criteria that may influence the mode of transport chosen and note these in the line “Others?” included in the table [\(see Material 5\)](#).
7. Now complete the table. Think about any other characteristics of the modes of transport which may have a positive or negative effect on the criteria stated.

## BOARD GAME

> see Annex for template to cut out

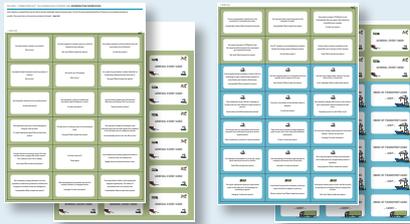
MATERIAL  
4



Please print out all the parts to be cut at a scale of 1:1 and stick together.

## PLAYING CARDS

> see Annex for template to cut out



Please duplex print front and reverse sides of all four sheets at a scale of 1:1 and cut out.

## GAME PIECES

> see Annex for template to cut out

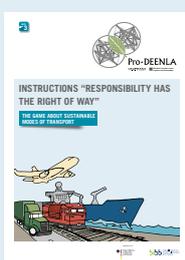


Please print out the sheet on a scale of 1:1 and assemble according to instructions.

## INSTRUCTIONS

> see Annex

NOTE  
3



Please read through carefully before starting with the game.



## OBSERVING THE COURSE OF THE GAME

### Observation task

As you already know from the basic module, the selection of a suitable mode of transport depends on various criteria (e.g. capacity, costs, security, length and circumstances of the transport route, transport speed, and environmental compatibility). During the course of the game, various events relating to these criteria will occur. Align these incidents to the criteria and note whether they exert a positive or negative impact on the selection of mode of transport. The table [\(Material 5\)](#) will be useful here.

### General tips

- As an independent observer, remain in the background and do not interfere with the course of the game.
- Make comprehensible and detailed notes to enable you to reflect on the course of the game afterwards.



CRITERIA	MEANS OF TRANSPORT			
	LORRY	SHIP	GOODS TRAIN	AIRCRAFT
Costs				
Capacity				
Security factors				
Transport route				
Speed				
Environmental sustainability				
Others?				



Environmentally friendly and efficient transport and logistics networks are a prerequisite if successful and sustainable business development is to be achieved. This is particularly true for a country like Germany, which is deeply integrated into global economic cycles and is also one of Europe’s key transit hubs by dint of its central position. The answer to the question as to what we should view as being a sustainable structure for the road, rail and waterway network is, however, far from obvious. The picture is marked by the differing perspectives of various vested interest groups, which try to influence political decision-making processes. In order to understand the points of view of the stakeholders, which in some cases are contradictory, simulating these correlations and literally playing them through is a useful approach to take.



Tasks to complete in pairs or groups

### TASK:

Play the simulation “Combined transport. Haulage and logistics of the future!?”.

**Please note:** the game leader will provide you with all further information (including the rules). Your trainer will take on the part of the game leader or will appoint someone to this role.

### IMPRINT

Leuphana University of Lüneburg, Business Education Unit, Universitätsallee 1, 21335 Lüneburg, Germany  
 Steinbeis Innovation Center Logistics and Sustainability (SLN), Dresdener Straße 17, 74889 Sinsheim, Germany

**Editorial staff:** Prof. Andreas Fischer, Harald Hantke, Jens-Jochen Roth, Kristin Senneke, Jan Pranger, Michael Tietz

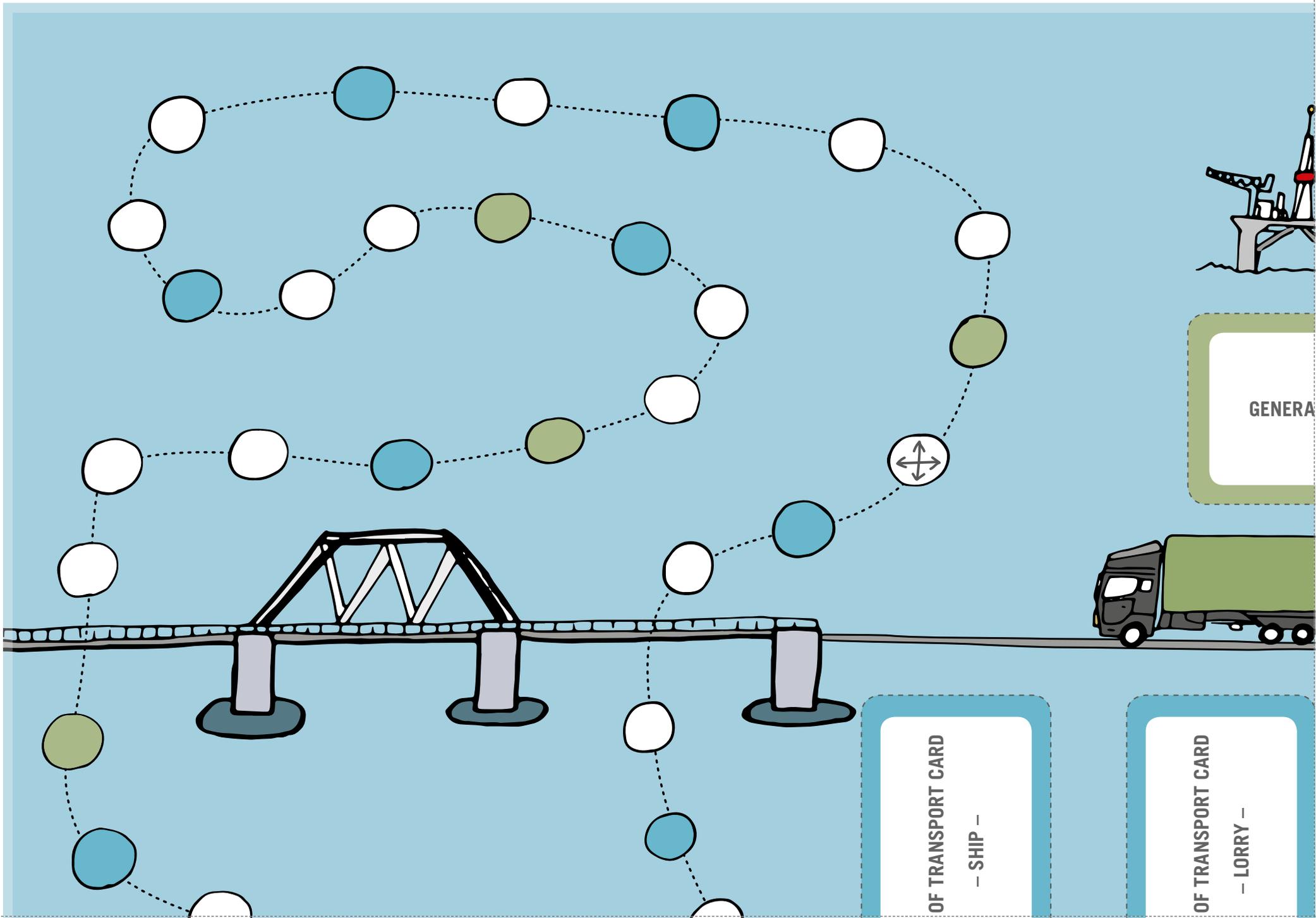
**Design and print setting:** Anke Sudfeld

**Photos/Illustrations:** Fotolia, Jan Pranger

### LICENSE NOTE

This learning module is subject to the Creative Commons license "Attribution – ShareAlike 3.0 Germany (CC BY-SA 3.0 DE)".

Explanation of the license: <https://creativecommons.org/licenses/by-sa/3.0/de/deed.en>



GENERA

3



MODE OF TRANSPORT CARD  
- SHIP -

MODE OF TRANSPORT CARD  
- LORRY -

1

APPLY GLUE HERE



GENERAL EVENT CARD

3



APPLY GLUE HERE

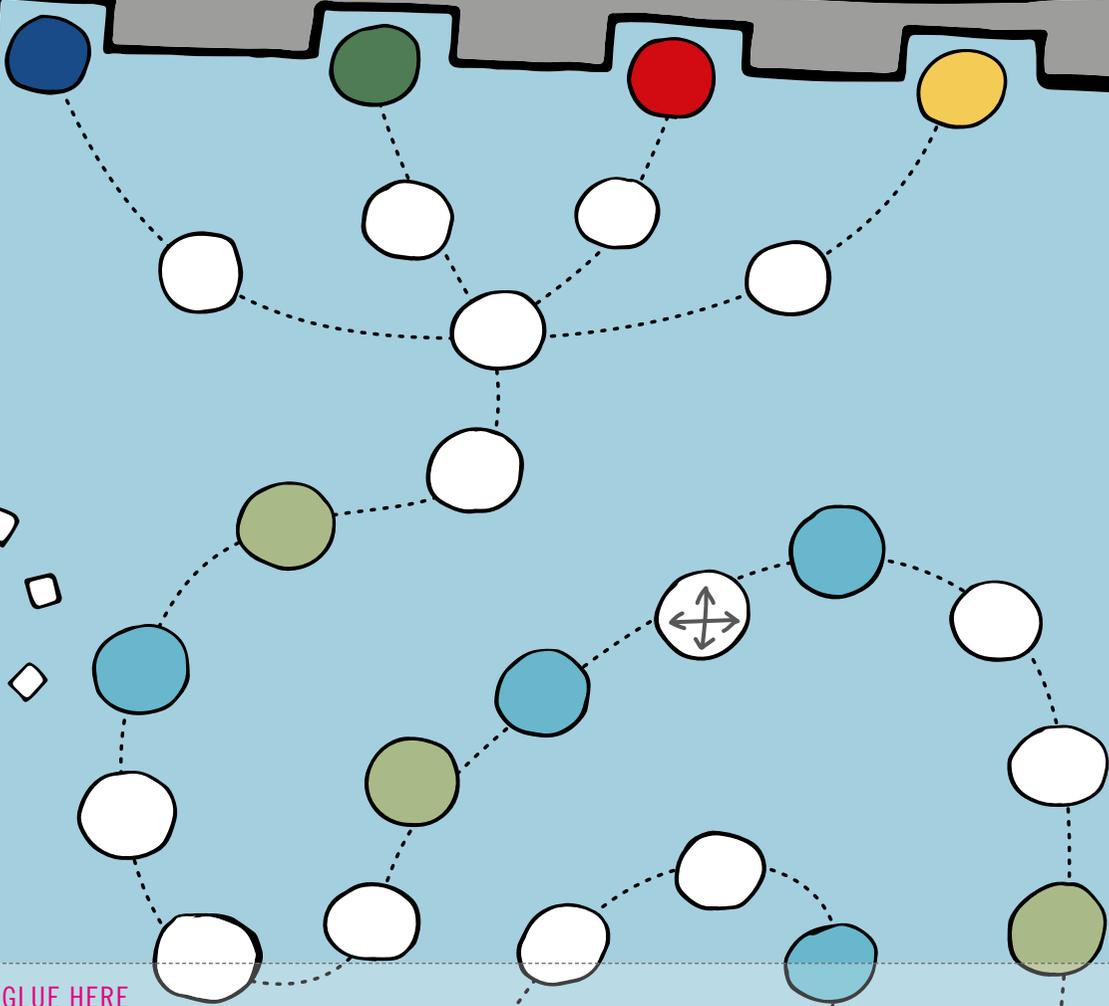
MODE OF TRANSPORT CARD  
— GOODS TRAIN —



MODE OF TRANSPORT CARD  
— AIRCRAFT —



APPLY GLUE HERE



2



1

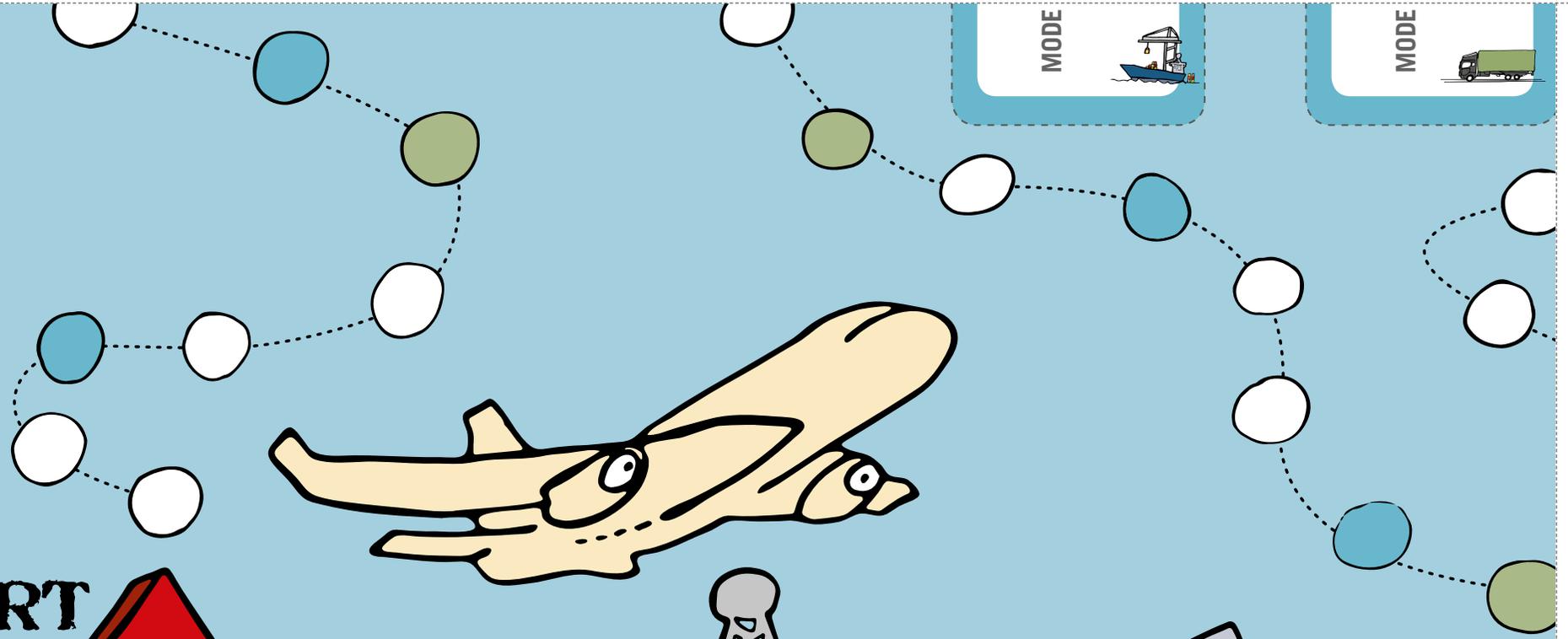
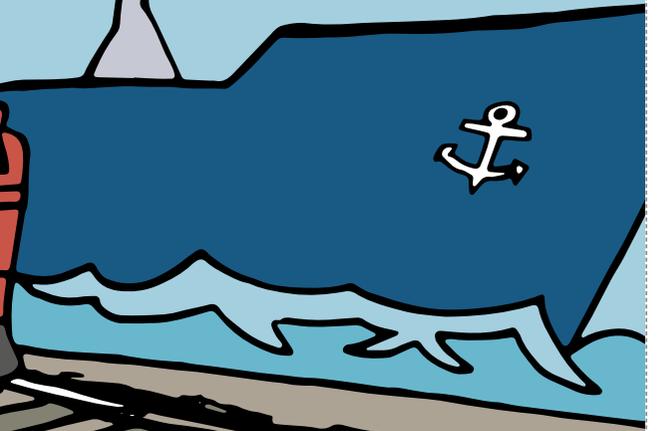
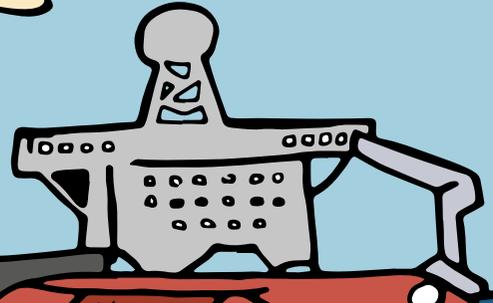
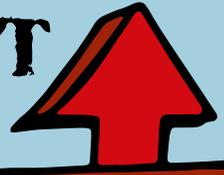
MODE



MODE



START



4





MODE

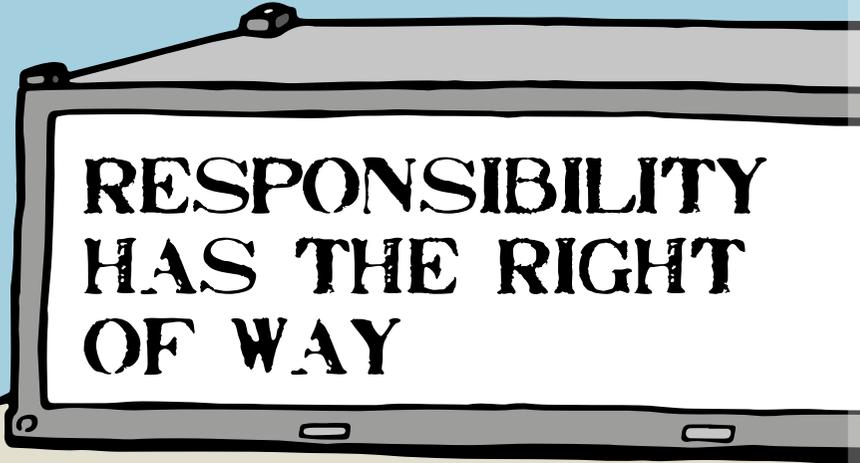


MODE



APPLY GLUE HERE

4



Pro-DEENLA  
LEUPHANA Leibniz-Universität Hannover  
Center for Digital Engineering and Sustainability

Some dexterity is required before you are able to play the sustainable mode of transport game. Cut out the cards along the dotted lines. Please do so as carefully and evenly as possible. Then place them on the positions marked on the board – **have fun!**

1. FRONT SIDE



You have become involved in an accident.

Miss a turn!

You have organised a training course on combined transport at your company.

Well done! Move forward five spaces!

Your loading capacity is not fully utilised. Have you never heard of eco-efficiency?

Go back two spaces!

Incomplete freight documents cause long delays at customs.

Miss a turn!

You need to go to the garage.

Miss a turn!

As a result of your initiative, Sustain GmbH will be using energy-saving bulbs only from now on.

Very good! Move forward two spaces!

Your hazardous materials are incorrectly labelled.

Go back two spaces!

Your dispatcher is guilty of shoddy work. Your delivery will be delayed as a result.

Go back two spaces!

You have thrown rubbish out of the window. What were you thinking? Pick it up at once!

Then go back five spaces!

Your dispatcher sends you a more advantageous transport route by email.

It's worth making the switch! Move forward two spaces!

You take part in a training course on the securing of loads.

Very good! Move forward two spaces!

You have been scheduled to transport some mass-bred pigs. But you catch sight of the conditions at the site whilst you are loading the animals.

You immediately start to feel sick. Miss a turn!

You have the idea of replacing some of the light switches at the company with motion sensors.

This is going to save a lot of energy!

Very clever! Move forward two spaces!

You find a shortcut!!

Throw again!

Environmentalists protesting against the waste of resources block the company site.

Engage them in discussion but miss a turn.

Your forwarding company announces its strict opposition to unnecessary fixed-term contracts and reorganises its human resources management.

Commendable! Move forward two spaces!

Misunderstandings arise between you and the recipient because of a language barrier.

Annoying! Go back two spaces!

You ensure that all offices at the company are equipped ergonomically. This leads to a considerable fall in the sickness rate.

Commendable! Move forward three spaces!





You stir management's enthusiasm for the introduction of a photovoltaic system.

A sustainable solution! Move forward two spaces!

Your company takes a robust approach to the separation of waste.

Commendable! Move forward two spaces!

Your parent company's CSR Report is due. Unfortunately, there are gaps in the information provided by your company.

Go back two spaces!

Your parent company's CSR Report is due. The Supervisory Board praises the commitment your company has shown.

Well done! Move forward one square!

Your PC continues to run throughout your absence because the energy-saving settings are wrong.

Go back three spaces!

Trainees stage an ideas competition on the responsible use of resources at the company.

Great! Move forward two spaces!



Your company has been investing in state-of-the-art technology for years, and your ships operate in a cost-effective and resource-efficient way.

Commendable! Move forward five spaces!



Your ship regularly travels on a stipulated route and operates at full capacity at all times.

Very efficient! Move forward two spaces!



Your ship has a huge loading capacity. The main effect of this is to save fuel.

A real advantage! Move forward three spaces!



Your company has been involved in shipping for 30 years and has never suffered a single incident of any note.

Great safety record! Move forward two spaces!



Your ship is the slowest of the available modes of transport.

Go back two spaces!



Your helmsman suddenly falls victim to sea sickness, and a replacement cannot be obtained at short notice.

Everything comes to a halt! Miss a turn!



Your ancient ship is a rank polluter and has been prevented from continuing its journey by environmental activists.

Their intervention is justified! Go back five spaces!



There has been an accident involving dangerous goods on your ship. It was caused by inadequate maintenance.

Risky! Go back two spaces!



Your ship has to change course because of severe bad weather. This will cost you time.

Annoying! Go back two spaces!



You make your ship available for a test trip, during which alternative fuels will be trialled.

Great! Move forward two spaces!



Your ship damages the landing stage because its navigation instruments are old and faulty.

Avoidable! Go back two spaces!



Your company supports a study into the possible use of towing kites as a supplementary means of propulsion.

Very progressive! Move forward two spaces!



The school holidays are starting in three federal states at the same time. The motorways are completely congested.

Annoying! Go back two spaces!



A new tunnel has just been completed, resulting in huge time and fuel savings for your lorry.

What a stroke of luck! Move forward two spaces!



You have put careful plans in place, and the lorry will be operating at full capacity during its regular runs in future.

Well done! Move forward two spaces!



**GENERAL EVENT CARD**



**GENERAL EVENT CARD**



**GENERAL EVENT CARD**



**GENERAL EVENT CARD**



**GENERAL EVENT CARD**



**GENERAL EVENT CARD**



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– SHIP –



**MODE OF TRANSPORT CARD**

– LORRY –



**MODE OF TRANSPORT CARD**

– LORRY –



**MODE OF TRANSPORT CARD**

– LORRY –





The motorway police catches one of your lorry drivers performing an illegal overtaking manoeuvre.

Unnecessary! Go back two spaces!



Your company introduces a telematics system. This saves enormous amounts of resources.

Commendable! Move forward two spaces!



Your lorry has its cargo stolen overnight.

Unlucky! Go back two spaces!



The lorry has got lost because obsolete maps were used. This costs time and money and has an adverse effect on the environment.

Unnecessary! Go back two spaces!



Your lorry is the most flexible of the modes of transport participating in the game.

A real advantage! Move forward three spaces!



Poor scheduling has meant that your lorry has used up a large quantity of fuel on an empty run.

Wasteful! Go back five spaces!



Your company has been investing in state-of-the-art technology for years, and your lorry operates in a cost-effective and resource-efficient way.

Commendable! Move forward five spaces!



The motorway police finds fault with the way in which the load has been secured and detains your lorry.

Unnecessary! Miss a turn!



You pay female and male drivers the same amount.

A fair approach! Move forward two spaces!



The speed of your aircraft means that you can afford to smile at the slowness of the other competing modes of transport.

Quick! Move forward three spaces!



Unfortunately, the loading capacity of your aircraft is relatively low.

What a shame! Go back two spaces!



The running costs of your aeroplane are significantly higher than those of the other modes of transport.

This is going to be expensive! Go back five spaces!



The range of your aircraft is enormous.

Great! Move forward two spaces!



Poor weather at the place of departure prevents your aeroplane from taking off on time.

Annoying! Miss a turn!



Your aircraft is the preferred mode of transport for high-value goods.

Fantastic! Move forward two spaces!



Careful maintenance means that your aircraft is considered particularly safe.

Commendable! Move forward five spaces!



There has been an accident involving dangerous goods on your aircraft. It was caused by incorrect handling.

Pretty bad! Go back two spaces!



An aeroplane is really not all that environmentally friendly.

Go back two spaces!



You have the idea of making minor adjustments to the aeroplane so that passengers can be carried on your company's transport flights.

You are a genius! Move forward two spaces!



The weather is superb at both the departure and destination airports.

What a stroke of luck! Move forward two spaces!



The ground staff at the destination is on strike. Your aircraft needs to be diverted to another airport.

Go back two spaces!





You have forgotten to take account of the different railway gauges used in Russia and Spain.

A real beginner's error! Go back five spaces!



The loading capacity of your train has been far exceeded because of a mistake made by your dispatcher.

Unnecessary! Go back two spaces!



Signal malfunction! Unfortunately, it will take until tomorrow morning to fix the problem.

Very unlucky! Miss a turn!



Passenger transport has priority over your goods train during the daytime.

Annoying! Go back two spaces!



Your goods train has a very high load capacity.

Cool! Move forward two spaces!



Your goods train is also permitted to operate on Sundays.

Fantastic! Move forward two spaces!



Your goods train has to stick to set timetables.

Inflexible! Go back two spaces!



Your goods train has priority over passenger transport during the night.

Quick! Move forward two spaces!



Transport via your goods train is a particularly environmentally friendly option.

Commendable! Move forward five spaces!



Poor weather at the departure or destination station? Absolutely no problem for your goods train.

A real advantage! Move forward three spaces!



There has been a copper theft along your route, and your goods train has come to a halt.

Annoying! Go back two spaces!



A second track has been completed and commissioned on a busy route.

A clear run! Move forward two spaces!

MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



MODE OF TRANSPORT CARD

– GOODS TRAIN –



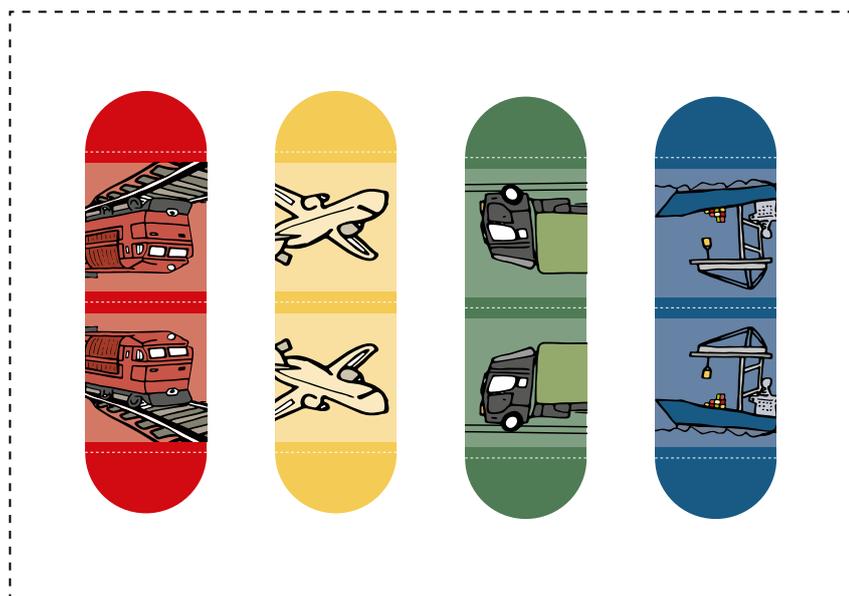
# HERE'S HOW TO CREATE YOUR GAME PIECES

## This is what you need:

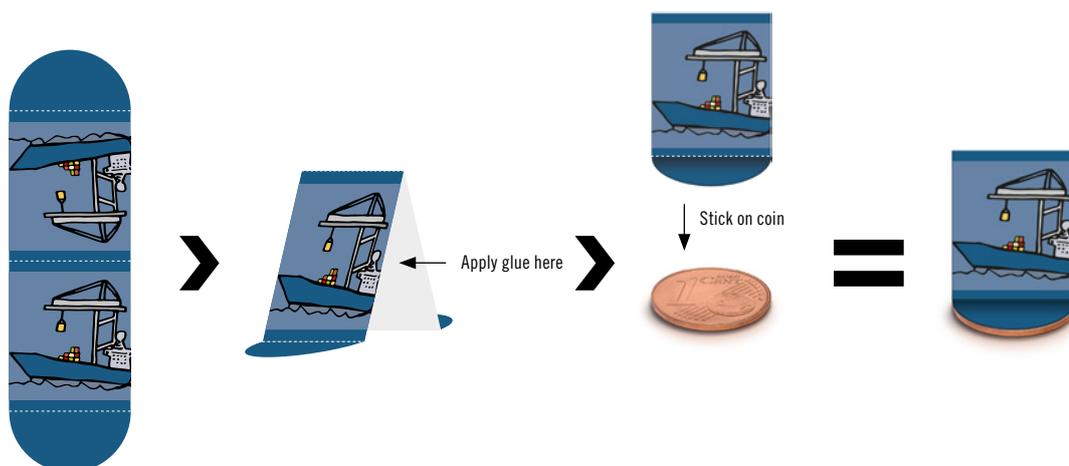
- Paper (can be quite thick)
- Printer
- Scissors
- Craft glue
- Four one-cent coins

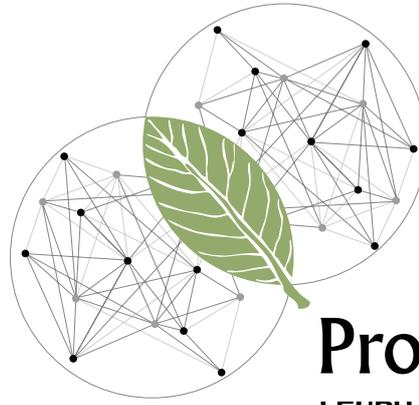
Print out this sheet in its original size (“100%”).  
Cut out the four different modes of transport and fold them along the dashed line as shown.  
First, stick the two long sides together back to back.  
Then stick the figure on a one-cent coin to stabilise it.

**Cut out > Fold > Stick > Done**



◀ Cut out all four modes of transport





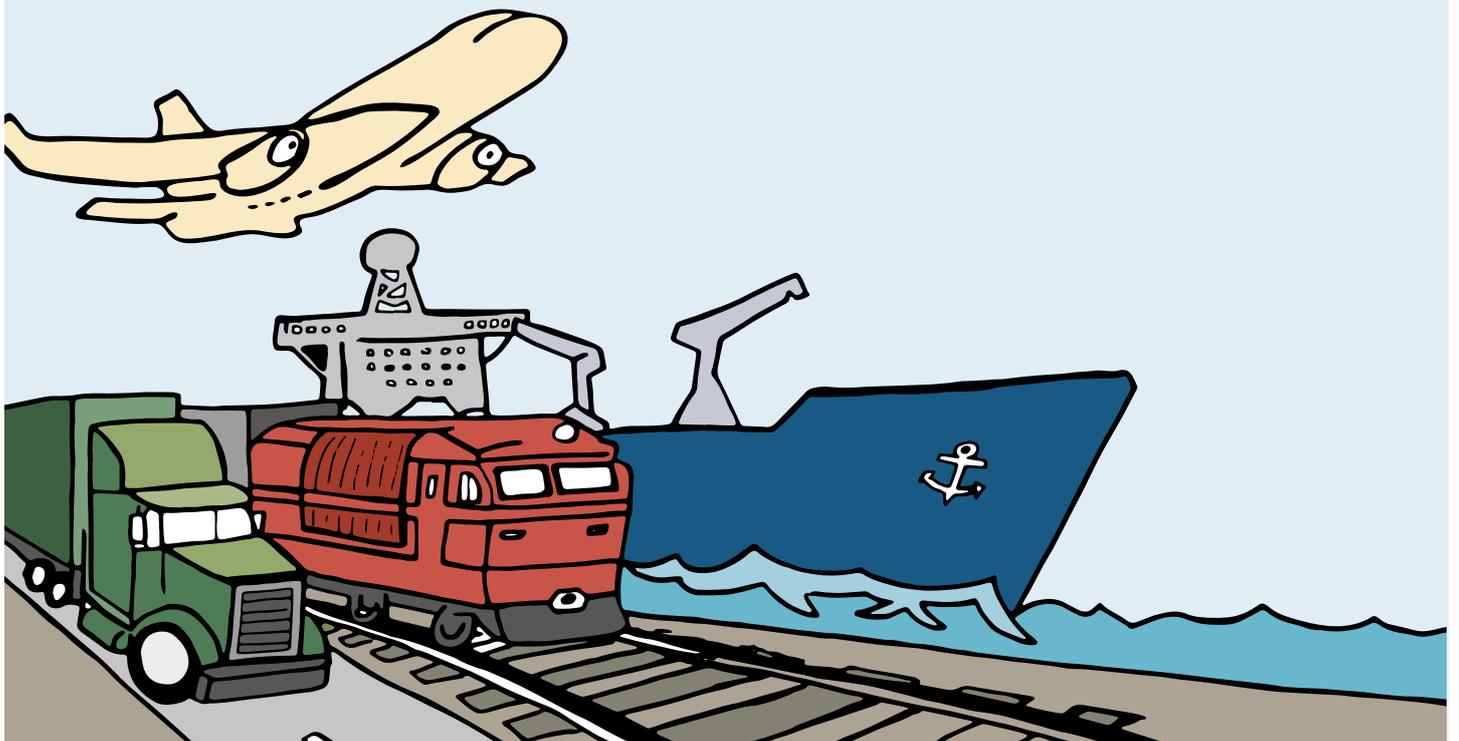
# Pro-DEENLA

LEUPHANA  
UNIVERSITY OF LÜNEBURG

Steinbeis Innovation Center  
Logistics and Sustainability

## INSTRUCTIONS “RESPONSIBILITY HAS THE RIGHT OF WAY”

THE GAME ABOUT SUSTAINABLE MODES OF TRANSPORT



SPONSORED BY THE

# WELCOME TO “RESPONSIBILITY HAS THE RIGHT OF WAY” – THE GAME ABOUT SUSTAINABLE MODES OF TRANSPORT!

Are you confident about your knowledge of the topic of sustainability in the transport and logistics sector? Time to prove it! Leave your competitors behind you and become the first to reach the transport destination. But be careful. You will be penalised for not acting sustainably by having to move backwards.

## Participants:

Two to four players.

## Playing time:

A game lasts around 30 minutes.

## Rules:

Before the game starts, each player decides on a mode of transport to represent in the race to be the fastest sustainable provider and selects the relevant game piece.

There are four classic options to choose from. The player operating on the road network receives the **lorry**. The **barge** or **maritime vessel** denotes transport via the inland waterways or on the high seas. Air freight and the railways are represented by a **transport plane** and by a **goods train** respectively. Once selection of the modes of transport has taken place, players put their pieces down in accordance with the colours shown on the traffic lights. This means that the lorry goes on red, the ship on blue and so on.

The players then roll the dice to determine who goes first. The player with the highest number of spots starts.

## And now the game begins!

The first player throws the dice and moves his/her game piece off the business premises of “Sustain GmbH” (“Start”) and forward by the number of spots shown. Direction of play is indicated by the arrow. What happens next is determined by where the piece has landed:

**White field:** the logistics network has come to a halt. Nothing happens. Your turn ends and you pass the dice **clockwise** to the next player.

**Green field:** take a **general event card** and follow the instructions on it. Unless the card states something to the contrary, your turn then ends and you pass the dice **clockwise** to the next player.

**Blue field:** take a **mode of transport card that matches the means of transport you have chosen** and follow the instructions on it. Unless the card states something to the contrary, your turn then ends and you pass the dice **clockwise** to the next player.

**Field with a cross symbol:** you have landed on a **hub** and are allowed to **roll the dice again**.

If you land on a field that is already occupied by another game piece, then the two modes of transport are combined. Because combined transport offers an opportunity to structure the transport chain in a more sustainable way, both players are rewarded. They both get another go.

## Attention!

The green and blue fields, the fields with a cross symbol, and the combined transport only apply if you land on them directly as a result of rolling the dice. So, for example, you are on a green field and draw an event card, permitting you to advance three fields and you now land on a blue field. The next player now takes his/her turn, and you do not draw another card.

## Objective of the game:

The first player to reach his/her transport destination (goods depot, lorry parking space, airport, or port) wins.

