

Translations and probabilities	Season	01
	Episode	11
	Time frame	1 period

Prerequisites : Events and probabilities

Objectives :

- See the importance of language in probabilities.
- Practise some simple probability computations

Materials :

- *Sentences in different languages.*
- *Task sheets.*

1 – Events defined in various languages

15 mins

Students work in groups of 4.

The definitions of 7 events are given in English, German, Spanish, Catalan, Danish, Italian and Romanian. Each group has to associate the sentences defining the same events in different languages.

2 – Simple probabilities

10 mins

Each group has to gather information around in the class to be able to compute the probabilities of the seven events, and other events defined using these ones.

3 – Intersections and unions

Remaining time

The intersection and union symbols are introduced by the teacher.

Some events are defined by one sentence in one language. Each event must be translated into English and then into the mathematical language, using the intersection and union symbols.

$M \cap B$: The randomly picked pupil is a boy and has blue eyes

$M \cup F$: Tilfældigt udvalgt elev er en pige eller en dreng

$M \cap S$: Die zufällig ausgewählter Schüler ist ein Junge und hat kurze Haare

$S \cap D$: Tilfældigt udvalgt elev har kort hår og brune øjne

$D \cup S$: Elev-a ales la întâmplare de par scurt sau maro ochi

$B \cup D$: El alumno elegido al azar tiene los ojos azules o marrones

$L \cup M$: Die zufällig ausgewählter Schüler ist ein Junge oder hat lange Haare

$F \cap B \cap L$: L'alumne escollit a l'atzar és una nena, té el cabell llarg i ulls blaus

$B \cup D \cup G$: Los ojos del alumno elegido al azar son azules, marrones o verdes,

$F \cap G$: L'allievo scelto a caso è una ragazza e ha gli occhi verdi

Translations and probabilities

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Task 1 – Translations

A pupil is picked randomly in your half-class. Seven events related to this random experiment are defined below in English. On a separate paper, the same events are written in German, Spanish, Catalan, Danish, Italian and Romanian. Find the translations of each event in the 6 other languages.

M : The randomly picked pupil is a boy.

F : The randomly picked pupil is a girl.

B : The randomly picked pupil has blue eyes.

D : The randomly picked pupil has brown eyes.

G : The randomly picked pupil has green eyes.

L : The randomly picked pupil has long hair.

S : The randomly picked pupil has short hair.

Notation	German	Spanish	Catalan	Danish	Italian	Romanian
M						
F						
B						
D						
G						
L						
S						

Task 2 – Simple probabilities

Find information in the class to compute the probabilities below. In the next part, more complicated events will be considered, so try to gather as much information as you can.

Event	M	F	B	D	G	L	S
Probability							

Task 3 – Intersections and unions of events

Below are defined, in other languages, 10 more events, intersections or unions of the seven first events. Translate each one in English and then in mathematics, using the notations for the initial events and the symbols \cap and \cup . When it's done, find out the probability of each new event.

Definition	The randomly picked pupil is a boy and has blue eyes.		
English			
Notation		Probability	
Definition	Tilfældigt udvalgt elev er en pige eller en dreng.		
English			
Notation		Probability	
Definition	Die zufällig ausgewählter Schüler ist ein Junge und hat kurze Haare.		
English			
Notation		Probability	
Definition	Tilfældigt udvalgt elev har kort hår og brune øjne.		
English			
Notation		Probability	
Definition	Elev-a ales la întâmplare de par scurt sau maro ochi.		
English			
Notation		Probability	

Definition	El alumno elegido al azar tiene los ojos azules o marrones.		
English			
Notation		Probability	
Definition	Die zufällig ausgewählter Schüler ist ein Junge oder hat lange Haare.		
English			
Notation		Probability	
Definition	L'alumne escollit a l'atzar és una nena, té el cabell llarg i ulls blaus.		
English			
Notation		Probability	
Definition	Los ojos del alumno elegido al azar son azules, marrones o verdes.		
English			
Notation		Probability	
Definition	L'allievo scelto a caso è una ragazza e ha gli occhi verdi.		
English			
Notation		Probability	

German

G1 : Die zufällig ausgewählter Schüler hat braune Augen

G2 : Die zufällig ausgewählter Schüler hat kurze Haare

G3 : Die zufällig ausgewählter Schüler ist ein Junge

G4 : Die zufällig ausgewählter Schüler hat Blues Augen

G5 : Die zufällig ausgewählter Schüler ist ein Mädchen

G6 : Die zufällig ausgewählter Schüler hat lange Haare

G7 : Die zufällig ausgewählter Schüler hat grüne Augen

Spanish

S1 : El alumno elegido al azar tiene ojos marrones

S2 : El alumno elegido al azar tiene el pelo largo

S3 : El alumno elegido al azar es una niña

S4 : El alumno elegido al azar tiene los ojos azules

S5 : El alumno elegido al azar tiene el pelo corto

S6 : El alumno elegido al azar es un niño

S7 : El alumno elegido al azar tiene los ojos verdes

Catalan

C1 : L'alumne escollit a l'atzar té ulls marrons

C2 : L'alumne escollit a l'atzar és un nen

C3 : L'alumne escollit a l'atzar té els cabells llargs

C4 : L'alumne escollit a l'atzar té els ulls blaus

C5 : L'alumne escollit a l'atzar té els ulls verds

C6 : L'alumne escollit a l'atzar té els cabells curts

C7 : L'alumne escollit a l'atzar és una nena

Danish

- D1** : Tilfældigt udvalgt elev har grønne øjne
D2 : Tlfældigt udvalgt elev er en pige
D3 : Tlfældigt udvalgt elev har brune øjne
D4 : Tlfældigt udvalgt elev har blå øjne
D5 : Tlfældigt udvalgt elev har kort hår
D6 : Tlfældigt udvalgt elev er en dreng
D7 : Tlfældigt udvalgt elev har langt hår

Italian

- I1** : L'allievo scelto a caso è una ragazza
I2 : L'allievo scelto a caso, ha gli occhi azzurri
I3 : L'allievo scelto a caso è un ragazzo
I4 : L'allievo scelto a caso, ha gli occhi marroni
I5 : L'allievo scelto a caso ha i capelli lunghi
I6 : L'allievo scelto a caso, ha gli occhi verdi
I7 : L'allievo scelto a caso ha i capelli corti

Romanian

- R1** : Elev-a ales la întâmplare părul lung
R2 : Elev la întâmplare ales are ochii de blues
R3 : Elev la întâmplare ales este un băiat
R4 : Elev la întâmplare ales are ochii maro
R5 : Elev la întâmplare ales este o fata
R6 : Elev la întâmplare culese are ochii verzi
R7 : Elev-a ales la întâmplare de păr scurt

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	Document	Correction

Task 1 – Translations

Notation	German	Spanish	Catalan	Danish	Italian	Romanian
M	G3	S6	C2	D6	I3	R3
F	G5	S3	C7	D2	I1	R5
B	G4	S4	C4	D4	I2	R2
D	G1	S1	C1	D3	I4	R4
G	G7	S7	C5	D1	I6	R6
L	G6	S2	C3	D7	I5	R1
S	G2	S5	C6	D5	I7	R7

Task 2 – Simple probabilities

Event	M	F	B	D	G	L	S
Probability							

Task 3 – Intersections and unions of events

Definition	The randomly picked pupil is a boy and has blue eyes.		
English	The randomly picked pupil is a boy and has blue eyes.		
Notation	$M \cap B$	Probability	
Definition	Tilfældigt udvalgt elev er en pige eller en dreng.		
English	The randomly picked pupil is a boy or a girl.		
Notation	$M \cup F$	Probability	
Definition	Die zufällig ausgewählter Schüler ist ein Junge und hat kurze Haare.		
English	The randomly picked pupil is a boy and has short hair.		
Notation	$M \cap S$	Probability	
Definition	Tilfældigt udvalgt elev har kort hår og brune øjne.		
English	The randomly picked pupil has short hair and brown eyes.		
Notation	$S \cap D$	Probability	
Definition	Elev-a ales la întâmplare de par scurt sau maro ochi.		
English	The randomly picked pupil has short hair and brown eyes.		
Notation	$D \cap S$	Probability	
Definition	El alumno elegido al azar tiene los ojos azules o marrones.		
English	The randomly picked pupil has blue eyes or brown eyes.		
Notation	$B \cup D$	Probability	
Definition	Die zufällig ausgewählter Schüler ist ein Junge oder hat lange Haare.		
English	The randomly picked pupil is a boy or has long hair.		
Notation	$L \cup M$	Probability	
Definition	L'alumne escollit a l'atzar és una nena, té el cabell llarg i ulls blaus.		
English	The randomly picked pupil is a girl with long hair and blues eyes.		
Notation	$F \cap B \cap L$	Probability	
Definition	Los ojos del alumno elegido al azar son azules, marrones o verdes.		
English	The randomly picked pupil is a boy or has brown or green eyes.		
Notation	$B \cup D \cup G$	Probability	
Definition	L'allievo scelto a caso è una ragazza e ha gli occhi verdi.		
English	The randomly picked pupil is a girl and has green eyes.		
Notation	$F \cap G$	Probability	