



Same Topic, Different Genre: Elementary School  
Children's Mental Representations of Information  
Embedded in Narrative and Expository Texts

---

Wienke Wannagat, Catharina Tibken and Gerhild Nieding

EasyChair preprints are intended for rapid  
dissemination of research results and are  
integrated with the rest of EasyChair.

August 5, 2021

## **Same Topic, Different Genre**

### **Same Topic, Different Genre: Elementary School Children's Mental Representations of Information Embedded in Narrative and Expository Texts**

Wienke Wannagat<sup>1</sup>, Catharina Tibken<sup>1</sup>, & Gerhild Nieding<sup>1</sup>

<sup>1</sup>Department of Psychology, University of Würzburg

#### **Author Note**

The authors declare that there are no conflicts of interest with respect to this preprint.

Correspondence should be addressed to Wienke Wannagat, Röntgenring 10, D-97070

Würzburg, Email: [wienke.wannagat@uni-wuerzburg.de](mailto:wienke.wannagat@uni-wuerzburg.de)

## Same Topic, Different Genre

### Abstract

Using a sentence recognition task, we investigated whether elementary school children's ( $N = 92$ ) memory of the text surface, the textbase, and the situation model differed depending on whether the same information was embedded in an expository or a narrative text. Other than previous research with children that used narrative and expository texts dealing with different topics, our results did not indicate differences between narrative and expository texts for any of the levels of representation. Thus, the effect of text topic on effects of genre on text comprehension might be important to consider and needs to be investigated further.

*Keywords: Narrative Text; Expository Text; Comprehension; Children*

## Same Topic, Different Genre

### **Same Topic, Different Genre: Elementary School Children's Mental Representations of Information Embedded in Narrative and Expository Texts**

During the first years of school, decoding and comprehending texts is an important learning goal, but over the years, students are increasingly expected to use texts as learning materials in subjects other than language classes (Allington & Johnston, 2002). Therefore, text comprehension is a crucial foundation for learning (Savolainen et al., 2008). Comprehension and the associated cognitive processes depend on many characteristics on the side of both the recipient (e.g., age or prior knowledge) and the text (e.g., presentation mode or cohesion). One important text characteristic is its genre (e.g., Graesser et al., 1997). For elementary school children, narrative and expository texts are two genres that are particularly relevant, both in and out of school.

Narrative texts are most commonly consumed as a leisure activity and from an early age (Spiro & Taylor, 1987). Narrative texts usually describe a series of causally and temporally connected events that revolve around one or more protagonists (Rumelhart, 1975). Expository texts, in contrast, focus on the structure and processes that underlie an event or system on a more abstract level (Wolfe & Mienko, 2007) and are particularly prevalent as learning materials in school. Behind this background, one may ask whether expository texts as a common way of presenting information in schoolbooks are really better learning materials than narrative texts. Recent meta-analyses support an overall notion of a beneficial effect of narrative over expository text that appears to extend beyond elementary school-aged children (Clinton et al., 2020; Mar et al., 2021). At the same time, however, previous research that compared comprehension of narrative and expository texts, particularly research with children, predominantly used expository and narrative texts that dealt with different topics (Best et al., 2008; Kraal et al., 2018;

## **Same Topic, Different Genre**

McNamara et al., 2011; Olson, 1985). Even when text difficulty is accounted for, effects of topic knowledge and interest as well as reliability and difficulty of the outcome measure, which have been controlled for in some but not all of the previous studies, remain possible confounding influences. This applies to elementary school children in particular, who, in comparison to samples of psychology undergraduates, for instance, can be considered more heterogeneous with regard to prior knowledge of history and science topics. In this study, we therefore examined whether elementary school children's text comprehension differs depending on whether the same information is embedded in an expository or a narrative text.

## **Method**

### **Participants**

Ninety-two children who attended Grade 3 or Grade 4 of two different German elementary schools participated in the study (44.6% boys, 55.4% girls;  $M_{age} = 9.3$  years,  $SD = 1.1$  years). All children were German native speakers or had mastered German at a native-speaker level. Children with a known diagnosis of attention deficit and hyperactivity disorder or dyslexia were excluded.

### **Materials and Procedure**

We based our operational definition of comprehension on the established theoretical approach that text comprehension entails three levels of mental representation: a representation of the text surface, the textbase and the situation model (Kintsch, 1998). We created four pairs of German narrative and expository texts with topics that had not yet been covered during lessons (knights, dinosaurs, rabbits, space travel). These text pairs conveyed the same content and were comparable in length (about 600 words) and text difficulty as indicated by Flesch values (see Amstad, 1978). For instance, the topic "space travel" was embedded into a narrative by

## Same Topic, Different Genre

describing a protagonist who imagines flying into space with her father. The corresponding expository version neutrally described the same information about astronauts and our solar system. See Table 1 for an overview of the surface characteristics of the experimental texts and Table 5 for an example text pair. The mean duration of the audio recordings did not differ statistically between narrative ( $M = 5:02$  min) and expository ( $M = 5:11$  min) text versions,  $t(6) = 1.075$ ,  $p = .323$ . Both versions were comparably easy to understand, as indicated by reading-ease scores that, to the best of our knowledge, provide the best possible estimation available for German texts. Reading-ease takes into account the average number of words per sentence and the average number of syllables per word (Flesch, 1948; Amstad, 1978). The highest possible score is 100, which would indicate maximum “easiness.” The scores of our experimental texts varied between 63 and 70, and were thus considered appropriate for the age group studied. Mean Flesch scores did not differ significantly between narrative ( $M = 69.75$ ) and expository ( $M = 67.75$ ) text versions,  $t(6) = -1.227$ ,  $p = .266$ .

The participants listened to the audio recordings of four texts, two being presented in their narrative and two in their expository version. We presented the texts auditorily to assess comprehension independently of the children’s ability to decode letters. Topics, text genre, and text position within the order of presentation were balanced across all participants. After each text, the participants completed a sentence recognition task (see Schmalhofer & Glavanov, 1986). Twelve sentences that were identical in the narrative and expository versions (evenly spread within the texts), were presented again auditorily in random order. Six of these sentences were presented in their original wording (O). Two sentences were presented as text surface changes, meaning that in these sentences, words were replaced by close synonyms, or by changing the active voice to passive (or vice versa) (TS) and were thus in line with the textbase.

## Same Topic, Different Genre

Two sentences were presented as textbase changes (TB). These were valid inferences based on the subject matter described in that sentence, in line with the situation model that is implied by the text. Two sentences were presented as situation changes, meaning that these sentences contradicted the implied situation model (S). See Table 2 for an example of an original sentence and its corresponding distractors (text surface change, textbase change, and situation changes, taken from the text about space travel). Across all participants, each sentence appeared equally often as each sentence type. Participants decided after each sentence, whether this sentence had occurred in the text or not.

In a generalized linear mixed model, we modelled the acceptance probability with fixed effects of genre and sentence type and random intercepts for the school and participant levels. Sentence type was entered in form of three dummy variables that indicated the comparisons of interest (O-TS for the surface, TS-TB for the textbase, and TB-S for the situation model; see Wolfe & Woodwyk, 2010). Each the difference of the acceptance probability between the two hierarchically consecutive sentence types served as an indicator for the memory of the respective level of mental representation.

## Results

Mean probabilities of yes responses are displayed in Table 3. Table 4 displays the estimates of the fixed effects for the generalized linear mixed model of the probabilities of yes responses. We found significant differences between O- and TS-, TS- and TB-, and TB- and S-sentences ( $p < .05$ ). This pattern indicates that the participants were able to distinguish text surface changes from original sentences, textbase changes from surface changes and situation changes from textbase changes, and thus displayed memory of information on each of the three levels of mental representation. However, we did not find significant interactions with genre for

## **Same Topic, Different Genre**

any of these comparisons. Thus, there is no indication that the memory of the text surface, the textbase or the situation model differed depending on genre.

### **Discussion**

This result pattern does not easily align with previous studies that indicated large effects of genre (e.g., Kraal et al., 2008) and the findings of the meta-analysis by Mar et al. (2021), who did not find any indication of control (vs. no control) for content being a relevant moderator of an effect of genre on comprehension. Thus, the current study indicates that the effect of text topic and, in close association, the information requested when measuring text comprehension, on genre effects on text comprehension might be important to consider and need to be investigated further.



## Same Topic, Different Genre

### References

- Allington, R. L., & Johnston, P. H. (2002). *Reading to learn: Lessons from exemplary fourth-grade classrooms*. Guilford Press.
- Amstad, T. (1978). *Wie verständlich sind unsere Zeitungen? Unpublished doctoral dissertation, University of Zürich, Switzerland.*
- Best, R. M., Floyd, R. G., & McNamara, D. S. (2008). Differential competencies contributing to children's comprehension of narrative and expository texts. *Reading Psychology, 29*(2), 137–164.
- Clinton, V., Taylor, T., Bajpayee, S., Davison, M. L., Carlson, S. E., & Seipel, B. (2020). Inferential comprehension differences between narrative and expository texts: a systematic review and meta-analysis. *Reading and Writing, 33*(9), 2223–2248.
- Graesser, A. C., Millis, K. K., & Zwaan, R. A. (1997). Discourse comprehension. *Annual review of psychology, 48*(1), 163–189.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge University Press.
- Kraal, A., Koornneef, A. W., Saab, N., & van den Broek, P. W. (2018). Processing of expository and narrative texts by low-and high-comprehending children. *Reading and writing, 31*(9), 2017–2040.
- Mar, R. A., Li, J., Nguyen, A. T., & Ta, C. P. (2021). Memory and comprehension of narrative versus expository texts: A meta-analysis. *Psychonomic Bulletin & Review, 1*–18.

## Same Topic, Different Genre

McNamara, D. S., Ozuru, Y., & Floyd, R. G. (2011). Comprehension challenges in the fourth grade: The roles of text cohesion, text genre, and readers' prior knowledge.

*International electronic journal of elementary education*, 4(1), 229–257.

Olson, M. W. (1985). Text type and reader ability: The effects on paraphrase and text-based inference questions. *Journal of Reading Behavior*, 17(3), 199–214.

Rumelhart, D. E. (1975). Notes on a schema for stories. In D. Bobrow, & A. Collins (Eds.), *Representation and understanding* (pp. 211–236). Academic Press.

Savolainen, H., Ahonen, T., Aro, M., Tolvanen, A., & Holopainen, L. (2008). Reading comprehension, word reading and spelling as predictors of school achievement and choice of secondary education. *Learning and Instruction*, 18(2), 201–210.

Schmalhofer, F., & Glavanov, D. (1986). Three components of understanding a programmer's manual: Verbatim, propositional, and situational representations. *Journal of memory and language*, 25(3), 279–294.

Spiro, R. J., & Taylor, B. M. (1987). On investigating children's transition from narrative to expository discourse: The multidimensional nature of psychological text classification. *Understanding readers' understanding: Theory and practice*, 77–93.

Wolfe, M. B., & Woodwyk, J. M. (2010). Processing and memory of information presented in narrative or expository texts. *British Journal of Educational Psychology*, 80(3), 341–362.

## Same Topic, Different Genre

Zwaan, R. A., & Radvansky, G. A. (1998). Situation models in language comprehension and memory. *Psychological Bulletin*, 123(2), 162–185.

**Table 1**

*Surface Characteristics of the Narrative and Expository Versions of the Experimental Texts.*

Topic		Narrative version	Expository version
	Flesch Score	70	70
Knights	Number of words (sentences)	580 (57)	595 (54)
	Duration of audio recording	4:56 min	4:53 min
	Flesch Score	68	63
Rabbits	Number of words	605 (60)	579 (75)
	Duration of audio recording	5:02 min	5:13 min
	Flesch Score	69	68
Dinosaurs	Number of words	616 (70)	630 (80)
	Duration of audio recording	4:57 min	5:11 min
	Flesch Score	72	70
Space travel	Number of words	625 (61)	616 (80)
	Duration of audio recording	5:11 min	5:28 min
	Flesch Score	$M = 69.75$	$M = 67.75$
Overall	Number of words	$M = 606.5 (62)$	$M = 605 (71.75)$
	Duration of audio recording	$M = 5:02 \text{ min}$	$M = 5:11 \text{ min}$

## Same Topic, Different Genre

**Table 2**

*An Example of the Text Surface, the Textbase, and the Situation Change of One Sentence, Taken From the Text About Space Travel. English Translations are in Parentheses.*

Sentences Type	
Original	Zwei Drittel der Erdoberfläche bestehen aus Wasser.  (Two-thirds of the earth's surface is water.)
Text surface change	Die Oberfläche der Erde setzt sich zu zwei Dritteln aus Wasser zusammen.  (Two-thirds of the earth's surface is made up of water.) <sup>1</sup>
Textbase change	Der größere Teil der Erdoberfläche besteht aus Wasser.  (The majority of the earth's surface is water.)
Situation change	Zwei Drittel der Erdoberfläche bestehen aus Land.  (Two-thirds of the earth's surface is land.)

---

<sup>1</sup> In the corresponding German version, the word order is different from the original sentence as well.

## Same Topic, Different Genre

**Table 3**

*Mean Probabilities of Yes Responses for all Sentence Types for Narrative and Expository Text Versions.*

	Narrative text	Expository text
	<i>Mean (SE)</i>	<i>Mean (SE)</i>
Original	.797 (0.015)	.799 (0.027)
Surface Change	.735 (0.027)	.683 (0.042)
Textbase Change	.626 (0.029)	.582 (0.045)
Situation Change	.236 (0.024)	.191 (0.031)

## Same Topic, Different Genre

**Table 4**

*Estimated Coefficients of the Fixed Effects, Standard Errors (SE), and z Values of Generalized Linear Mixed Model of Yes-Responses.*

	Estimate	SE	z	p
(Intercept)	0.439	0.151	2.901	< .001
Sentence 1 (O vs. TS)	0.342	0.146	2.341	.019
Sentence 2 (TS vs. TB)	0.499	0.167	2.995	.003
Sentence 3 (TB vs. S)	1.672	0.165	10.124	< .001
Genre	-0.186	0.078	-2.388	.017
Sentence 1 × Genre	0.252	0.202	1.244	.213
Sentence 2 × Genre	-0.068	0.231	-0.292	.771
Sentence 3 × Genre	-0.058	0.237	0.243	.808

*Note.* Genre (effect-coded: 1 = expository text, -1 = narrative text). O: original, TS: text surface change, TB: textbase change, S: situation change.

## Same Topic, Different Genre

**Table 5**

*An example text pair. The sentences printed in bold face are the sentences that make up the sentence recognition task.*

<b>Expository version</b>	
<b>German Original</b>	<b>English Translation</b>
<b>Astronauten im All</b>	<b>Astronauts in Space</b>
<p>Sterne haben die Menschen schon immer fasziniert. Auch heute noch wollen wir ihre Geheimnisse entdecken. Anders als früher ist das heute eher möglich. Astronauten werden ausgebildet, um in den Weltraum zu reisen. Dort erforschen sie Planeten.</p> <p>Viele Kinder träumen davon, Astronaut zu werden. Es muss spannend sein, das All zu erkunden und in einem Raumschiff zu fliegen!</p> <p>Aber wie reist man in den Weltraum? Und was wissen wir heute über unser Sonnensystem?</p> <p>In diesem Text geht es um Astronauten. Außerdem werden zwei Planeten unseres Sonnensystems genauer beschrieben.</p> <p>Die Reise in den Weltraum beginnt in einer Rakete. Beim Start haben die Astronauten einen Raumanzug und einen Helm an. Damit sind sie gut geschützt. <b>Der Raumanzug schützt beispielsweise vor dem Erfrieren. Außerdem tragen sie Kopfhörer, die vor dem Lärm, mit dem die Rakete abhebt, schützen.</b> So hören sie den Start der Rakete nicht. Sie spüren den</p> <p>Abflug aber sehr. Dabei werden sie nämlich fest in ihre Sitze gedrückt. Man kann zuerst nichts sehen, wenn man aus dem Fenster schaut. <b>Beim Start steckt die Rakete nämlich noch in einer undurchsichtigen Hülle.</b> Nach dem Start fällt die Hülle ab. Dann sieht man die Dunkelheit des</p>	<p>Stars have always fascinated people. Even today, we still want to discover their secrets. Unlike in the past, this is more easily possible today. Astronauts are trained to travel into space. There they explore planets.</p> <p>Many children dream of becoming astronauts. It must be exciting to explore space and to fly in a spaceship!</p> <p>But how do you travel into space? What do we know today about our solar system? This text is about astronauts. Furthermore, two planets of our solar system are described in more detail.</p> <p>The journey into space begins in a rocket. At launch, the astronauts wear a spacesuit and a helmet. With these, they are well protected. <b>For example, the spacesuit protects them from freezing to death. They also wear headphones that protect them from the loud noise with which the rocket takes off.</b> This way, they do not hear the launch of the rocket. However, they feel the takeoff very much. They are pressed firmly into their seats. At first, you cannot see anything when you look out of the window. <b>At launch, the rocket is still in a non-transparent cover.</b> After the launch, the cover falls off. Then you see the darkness of space. When you look back at the Earth, it looks very blue. That is because of the large amount of water. <b>Two-thirds of the Earth's surface is water.</b></p>

## Same Topic, Different Genre

Weltraums. Wenn man zur Erde zurückblickt, sieht diese sehr blau aus. Das liegt an dem vielen Wasser. **Zwei Drittel der Erdoberfläche bestehen aus Wasser.**

Im All bemerkt man schnell eine weitere Veränderung. Die Schwerkraft der Erde wirkt nicht mehr. Nichts zieht einen mehr nach unten. Man ist schwerelos. Astronauten können dort schweben. Daran müssen sie sich erst gewöhnen. **Wenn sie sich im Weltall zu heftig abstoßen, können sie nämlich mit den Wänden des Raumschiffes zusammenstoßen.**

Beim Essen müssen sich die Astronauten auch umgewöhnen. Kochen können sie im Weltraum nämlich nicht. Daher essen sie Weltraumnahrung. **Das Weltraumessen ist lange haltbar und enthält alle wichtigen Nährstoffe. Man kann die Weltraumnahrung nicht sofort essen, weil man zunächst Wasser hinzufügen muss.** Auch funktioniert der Geschmackssinn im All nicht so gut. Daher ist die Nahrung extra stark gewürzt. Lecker ist sie aber trotzdem

nicht. Astronauten sagen, dass sie trotzdem fade schmeckt. Sie vermissen das Essen auf der Erde.

Wie sieht nun das Sonnensystem, das die Astronauten erforschen? Unser Sonnensystem hat acht Planeten. Sie heißen Merkur, Venus, Erde, Mars, Jupiter, Saturn, Uranus und Neptun. Diese Namen klingen erst einmal komisch. Man kann sie sich aber durch einen Spruch merken. Sie fangen mit den gleichen Buchstaben wie die Wörter des Spruches an. Er lautet: „Mein Vater erklärt mir jeden Samstag unseren Nachthimmel.“ Zwei Planeten werden jetzt genauer beschrieben.

Zuerst geht es um den Mars. Von der Sonne aus gesehen ist er der vierte Planet. **Der Mars ist nach dem römischen Gott des Krieges benannt.** Wenn man ihn sich anschaut, versteht man, warum. **Auf der Oberfläche des Mars kann man riesige Vulkane und Gebirge erkennen.** Außerdem ist er ganz rot. Etwas macht den Mars aber besonders

In space, you quickly notice another change. The gravity of the earth no longer has an effect. Nothing pulls you down anymore. You are weightless. Astronauts can float there. They have to get used to that first. **If they push themselves off too hard in space, they can collide with the walls of the spaceship.**

For eating, the astronauts will also have to get used to things. They are unable to cook in space. Therefore, they eat space food. **Space food has a long shelf life and contains all the important nutrients. You cannot eat the space food right away because you have to add water first.** In addition, the sense of taste does not work so well in space. Therefore, the food is flavored extra strongly. However, it is still not tasty. Astronauts say it tastes bland nevertheless. They miss the food on Earth.

So what does the solar system that the astronauts are exploring look like? Our solar system has eight planets. They are called Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. These names sound strange at first. You can remember them by a phrase. They start with the same letters as the words of the phrase. It reads, "My father explains our night sky to me every Saturday." Two planets are now described in more detail.

At first, this is about Mars. Seen from the sun, it is the fourth planet. **Mars is named after the Roman god of war.** If you look at it, you understand why. **On the surface of Mars you can see huge volcanoes and mountains.** It is also entirely red. Something makes Mars particularly interesting, though. Researchers have found frozen water on it. This means that it could be life there. **Because probably there can only be life where there is water.** However, there are no Martians there. If at all, there are only very small creatures living in the ice.



## Same Topic, Different Genre

<p>interessant. Forscher haben auf ihm gefrorenes Wasser gefunden. Das heißt, dass es dort Leben geben könnte. <b>Denn wahrscheinlich gibt es nur dort, wo es Wasser gibt, auch Leben.</b> Marsmännchen gibt es dort aber nicht. Im Eis wohnen, wenn überhaupt, sehr kleine Lebewesen. Außer den Planeten gibt es in unserer Nähe einen Asteroidengürtel. <b>Der Asteroidengürtel liegt zwischen dem Mars und dem Planeten Jupiter.</b> Er besteht aus tausenden von Gesteinsbrocken.</p> <p>Hinter dem Jupiter liegt der Saturn. <b>Der Saturn ist der zweitgrößte Planet unseres Sonnensystems.</b> Er sieht besonders aus. Denn er ist von Ringen umgeben. Sie bestehen aus tausenden von schmalen Bändern. Es sind Bänder aus Staub und Eisenteilchen. Außerdem hat der Saturn viele Monde. Insgesamt über 60! Heute wissen wir schon viel über die Planeten in unserer Nähe. Wir haben sogar schon andere Sonnensysteme erforscht. Viele Rätsel sind aber auch noch nicht gelöst. Die Zukunft der Raumfahrt bleibt also spannend!</p>	<p>Apart from the planets, there is an asteroid belt in our near surrounding. <b>The asteroid belt lies between Mars and the planet Jupiter.</b> It consists of thousands of rock fragments.</p> <p>Behind Jupiter lies Saturn. <b>Saturn is the second largest planet in our solar system.</b> It looks special. Because it is surrounded by rings. They consist of thousands of narrow bands. They are bands of dust and iron particles. Furthermore, Saturn has many moons. In total more than 60!</p> <p>Today, we already know a lot about the planets near us. We have even explored other solar systems. However, many mysteries have not yet been solved. The future of space travel therefore remains exciting!</p>
<p><b>Narrative version</b></p>	
<p><b>German Original</b></p> <p style="text-align: center;"><b>Leonie reist zu den Planeten</b></p> <p>Leonie langweilt sich. Sie muss das Bett hüten, weil sie die Grippe hat. Da kommt ihr Vater zur Tür herein und sagt, dass er ihr eine Geschichte erzählen möchte.</p> <p>Leonie ist begeistert.</p> <p>„Was für eine Geschichte denn?“, fragt sie.</p> <p>„Was hältst du davon, wenn wir zusammen in den Weltraum fliegen?“, fragt ihr Vater.</p> <p>Als Leonie sich vorstellt, wie sie zusammen in die Rakete steigen, ist sie sehr aufgeregt. Zum Schutz haben tragen beide einen Raumanzug und einen Helm an. <b>Der Raumanzug schützt beispielsweise vor dem Erfrieren. Außerdem tragen sie</b></p>	<p><b>English translation</b></p> <p style="text-align: center;"><b>Leonie travels to the planets</b></p> <p>Leonie is bored. She has to stay in bed because she has the flu. Just in this moment, her father comes through the door and announces that he will tell her a story.</p> <p>Leonie is thrilled.</p> <p>"What story is this?" she asks.</p> <p>"What do you think about us flying into space together?" her father asks.</p> <p>As Leonie imagines them stepping into the rocket together she is very excited. For protection, they both wear a spacesuit and a helmet. <b>For example, the spacesuit protects them from freezing to death. They also wear</b></p>

## Same Topic, Different Genre

<p><b>Kopfhörer, die vor dem Lärm, mit dem die Rakete abhebt, schützen.</b></p> <p>„Vor dem Fenster sehen wir jetzt noch nichts“, sagt Leonies Vater. <b>„Beim Start steckt die Rakete nämlich noch in einer undurchsichtigen Hülle.“</b></p> <p>Dann geht es los, die beiden werden in ihre Sitze gepresst und Leonies Herz schlägt vor Aufregung und Freude sehr schnell. Als die Hülle der Rakete abfällt und sie aus dem Fenster schaut, erblickt sie die Dunkelheit des Weltraums. Und als sie zur Erde zurückblickt, erkennt sie, dass ihr Heimatplanet ganz blau ist.</p> <p>„Liegt das an dem ganzen Wasser?“</p> <p>Ihr Vater nickt.</p> <p><b>„Ja. Zwei Drittel der Erdoberfläche bestehen aus Wasser.“</b></p> <p>Leonie schnallt sich von ihrem Sitz ab. Jetzt, da sie nicht mehr von der Schwerkraft der Erde angezogen wird, können sie und ihr Vater durch das Raumschiff schweben, wobei sie zunächst vorsichtig sein müssen. <b>Wenn sie sich im Weltall zu heftig abstoßen, können sie nämlich mit den Wänden des Raumschiffes zusammenstoßen.</b></p> <p>„Wo möchtest du zuerst hinfliegen?“, fragt ihr Vater.</p> <p>Leonie überlegt. Sie weiß, dass das Sonnensystem, in dem die Erde liegt, insgesamt acht Planeten hat: Merkur, Venus, Erde, Mars, Jupiter, Saturn, Uranus und Neptun. Die Anfangsbuchstaben der Planeten kann sie sich mit dem Spruch „Mein Vater erklärt mir jeden Samstag unseren Nachthimmel“ merken.</p> <p>„Zum Mars!“, ruft sie. Gemeinsam steuern sie den Planeten an, der am viertweitesten von der Sonne entfernt ist.</p> <p>Als sie den roten Planeten durch die Fenster des Raumschiffes betrachten, staunt Leonie nicht schlecht. <b>Auf der Oberfläche des Mars kann man</b></p>	<p><b>headphones that protect them from the loud noise with which the rocket takes off.</b></p> <p>"We can't see anything outside the window yet," says Leonie's father. <b>"At launch, the rocket is still in a non-transparent cover."</b></p> <p>Then it starts, the two are pressed into their seats and Leonie's heart beats very fast with excitement and joy. As the cover of the rocket comes off and she looks out the window, she sees the darkness of space. And when she looks back to Earth, she realizes that her home planet is all blue.</p> <p>"Is that because of all the water?"</p> <p>Her father nods.</p> <p><b>"Yes. Two-thirds of the Earth's surface is water."</b></p> <p>Leonie unbuckles herself from her seat. Now that she is no longer pulled by the Earth's gravity, she and her father can float through the spaceship, having to be careful at first. <b>If they push themselves off too hard in space, they can collide with the walls of the spaceship.</b></p> <p>"Where would you like to fly to first?" her father asks.</p> <p>Leonie thinks about it. She knows that the solar system in which Earth lies has a total of eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. She can remember the first letters of the planets by the phrase "My father explains our night sky to me every Saturday".</p> <p>"To Mars!" she shouts. Together, they steer toward the planet that is the fourth farthest away from the sun.</p> <p>When they look at the red planet through the windows of the spaceship, Leonie is amazed. <b>On the surface of Mars, you can see huge</b></p>
--	---

## Same Topic, Different Genre

**riesige Vulkane und Gebirge erkennen. „Der Mars ist nach dem römischen Gott des Krieges benannt.“**, erklärt ihr Vater ihr. „Und man hat auf ihm gefrorenes Wasser entdeckt. Das heißt, es könnte dort Lebewesen geben.

**Denn wahrscheinlich gibt es nur dort, wo es Wasser gibt, auch Leben.“**

„Also gibt es doch Marsmännchen?“, fragt Leonie entgeistert. „Nein“, lacht ihr Vater und erklärt ihr, dass das es sehr kleine Lebewesen wären, die dort im

Eis wohnen würden. Als nächstes reisen Leonie und ihr Vater zum Saturn, Leonies Lieblingsplaneten.

„Aber erst noch was essen“, sagt Leonie und packt die Weltraumnahrung aus. **Das Weltraumessen ist lange haltbar und enthält alle wichtigen Nährstoffe. Man kann die Weltraumnahrung nicht sofort essen, weil man zunächst Wasser hinzufügen muss.** Leonie schmeckt sie gar nicht. Sie ist lasch, obwohl sie doch extra stark gewürzt ist! Ihr Vater erklärt ihr, dass das daran liegt, dass der Geschmackssinn im Weltraum nicht so gut funktioniert - da

fliegt sie doch lieber gleich weiter.

Um zum Saturn zu kommen, müssen die beiden das Raumschiff allerdings zuerst durch einen Asteroidengürtel steuern. **Der Asteroidengürtel liegt zwischen dem Mars und dem Planeten Jupiter.** Er besteht aus tausenden von Gesteinsbrocken. Das ist ganz schön gefährlich, aber zum Glück schaffen sie es.

Nachdem sie am Jupiter vorbeigeflogen sind, sehen sie den Saturn. **Der Saturn ist der zweitgrößte Planet unseres Sonnensystems.** Leonie staunt über die Ringe, die ihn umgeben.

Ihr Vater erklärt ihr, dass es sich dabei um tausende von schmalen Bändern aus Staub und Eisenteilchen handelt.

**volcanoes and mountains. "Mars is named after the Roman god of war."**, her father explains to her. "And frozen water has been discovered on it. That means there could be living things there. **Because probably there can only be life where there is water "**

"So there are Martins after all?" asks Leonie, bewildered.

"No," laughs her father, explaining that If at all, there are only very small creatures living in the ice. Next, Leonie and her father travel to Saturn, Leonie's favorite planet.

"But first we'll eat something," says Leonie and unpacks the space food. **Space food has a long shelf life and contains all the important nutrients. You cannot eat the space food right away because you have to add water first.** Leonie does not like it at all. It is bland, even though it is flavored extra-strongly! Her father explains to her that this is because the sense of taste does not work so well in space - so she would rather fly right on.

To get to Saturn, the two must first steer the spacecraft through an asteroid belt. **The asteroid belt lies between Mars and the planet Jupiter.** It consists of thousands of rock fragments. That is pretty dangerous, but luckily they can do it.

After flying past Jupiter, they see Saturn. **Saturn is the second largest planet in our solar system.** Leonie is astonished by the rings that surround it. Her father explains to her that they are thousands of narrow bands of dust and iron particles.

Then Leonie discovers something: "Saturn has several moons!"

"Yes, even over 60," her father explains.

Leonie is amazed and then has to yawn. Her father steers the spaceship back toward Earth,

## Same Topic, Different Genre

<p>Dann entdeckt Leonie etwas: „Der Saturn hat ja mehrere Monde!“</p> <p>„Ja, sogar über 60“, erklärt ihr Vater ihr. Leonie staunt und muss dann gähnen. Ihr Vater steuert das Raumschiff zurück in Richtung Erde und noch vor der Landung ist Leonie eingeschlafen.</p>	<p>and even before the landing, Leonie has fallen asleep.</p>
--	---

The texts are based on information gathered from the following sources:

<https://www.geo.de/geolino/forschung-und-technik/10108-rtkl-astronauten-interview-im-all-schlaeft-man-auch-kopfueber> (17.10.2018)

<https://www.zdf.de/kinder/logo/logo-erklaert-astronautennahrung-100.html> (17.10.2018)

<http://www.news4kids.de/wissen/technik/article/warum-mussen-astronauten-einenraumanzug-tragen> (18.10.2018)

<https://www.kindernetz.de/wissen/acht-planeten-unseres-sonnensystems-100.html> (17.10.2018)

[https://www.planet-schule.de/mm/die-erde/Barrierefrei/pages/Was\\_ist\\_unser\\_Sonnensystem\\_und\\_wie\\_ist\\_es\\_entstanden.html](https://www.planet-schule.de/mm/die-erde/Barrierefrei/pages/Was_ist_unser_Sonnensystem_und_wie_ist_es_entstanden.html) (17.10.18)

<https://www.spektrum.de/news/asteroidenguertel-um-sonne-gesteinsbrockenzwischen-jupiter-und-mars/982787> (17.10.2018)

[http://vernetzter.de/dev/index.php?option=com\\_content&view=article&id=97&Itemid=81](http://vernetzter.de/dev/index.php?option=com_content&view=article&id=97&Itemid=81) (08.11.18)

[http://www3.hhu.de/biodidaktik/WasserSek\\_I/wo\\_findet\\_man\\_wasser/dateien/wasser\\_auf\\_der\\_erde.html](http://www3.hhu.de/biodidaktik/WasserSek_I/wo_findet_man_wasser/dateien/wasser_auf_der_erde.html) (21.11.18)