A P P E N D I C E S

Appendix 1 "Pre-test and Post-test Questions"

Topic : Analytical Exposition Text: Save Energy for a Better Future
Class : XI Grade of UPT SMA Negeri 2 Parepare
Date :

Save Energy for a Better Future

In our daily life, energy is an essential part that helps us do almost everything. From turning on the lights to using a smartphone, energy is involved. However, people often waste energy without realizing its impact on the environment and the future. Therefore, we must save energy to protect our planet and ensure a better life for future generations.

First, saving energy can reduce environmental pollution. The more energy we use, the more pollution is produced, especially from non-renewable sources like coal and oil. By saving energy, we can decrease the emission of harmful gases such as carbon dioxide which causes global warming. Second, saving energy can also reduce the use of non-renewable resources. Most of the energy we use comes from limited resources that will run out someday. If we do not start saving energy now, our future generations will face difficulties in finding energy sources. Third, saving energy can help us save money. When we use less electricity, water, and fuel, our monthly bills will be lower. Simple actions like turning off unused lights, using public transportation, or reducing water usage are small habits that can bring big benefits.

In conclusion, saving energy is very important for protecting the environment, preserving natural resources, and saving money. It is everyone's responsibility to start using energy wisely. If we work together and create energy-saving habits, we can build a better future for the next generation.

1. What is the main purpose of the text?
   a. To explain how energy is created
   b. To persuade people to save energy
   c. To entertain the readers about electricity
   d. To describe different kinds of energy

2. Based on the text, what happens when people waste energy?
   a. It saves money
   b. It helps nature grow
   c. It causes pollution and harms the environment
   d. It creates more electricity

3. Why does the writer mention turning off unused lights?
   a. To show how expensive energy is
   b. To give an example of how to waste energy
   c. To suggest a simple way to save energy
   d. To explain how electricity works

4. What is the meaning of "non-renewable resources" as used in the text?
    a. Energy from the sun and wind
    b. Resources that can be reused
    c. Resources that are unlimited
    d. Energy sources that can run out

5. According to the text, what is one result of using less energy?
    a. More energy bills
    b. Less air pollution
    c. More use of fossil fuels
    d. Greater electricity use

6. What is the function of the second paragraph in the text?
    a. To tell a story about pollution
    b. To give reasons for using more electricity
    c. To support the idea of saving energy with arguments
    d. To describe the types of natural disasters

7. What does the writer want readers to do after reading the text?
    a. Use more oil and coal
    b. Keep lights on all day
    c. Start saving energy in daily life
    d. Ignore the problem of pollution

8. How does the text help readers understand the problem of energy waste?
    a. By showing statistics
    b. By telling a joke
    c. By giving reasons and examples
    d. By using difficult words

9. What does the word “emission” most likely mean in the context of the text?
    a. A kind of energy
    b. The release of harmful gases
    c. A new electric device
    d. A place to store power

10. What is the writer's attitude toward saving energy?
    a. Unconcerned
    b. Disagreeing
    c. Supportive and serious
    d. Confused

11. Which of the following best summarizes the third paragraph?
    a. Saving energy makes people richer
    b. Saving energy can reduce water pollution
    c. Saving energy helps reduce monthly bills
    d. Saving energy has no impact on finances

12. Why is saving energy important for future generations, according to the text?
    a. So they can travel more
    b. So they can have enough energy resources
    c. So they can live without rules
    d. So they can use more coal

13. What is the main idea of the first paragraph (thesis)?
    a. People don't like smartphones
    b. Energy is used for cooking only
    c. People must save energy for the future
    d. Energy is free and unlimited

14. How does the writer organize the text to present his ideas clearly?
    a. By comparing two texts
    b. By using a narrative style
    c. By stating an opinion and giving supporting arguments
    d. By listing energy types

15. Why does the writer mention pollution and global warming?
    a. To show that energy is good
    b. To confuse the readers
    c. To highlight the danger of wasting energy
    d. To promote fossil fuel use

Appendix 2 "Observation Checklist"

Observation Checklist for Students' Activeness in Learning Using Assemblr Edu App

Class : XI Grade of UPT SMA Negeri 2 Parepare

Topic : Analytical Exposition Text — *Save the Energy*

Date :

No.	Students Name	Paying Attention to the Teacher's Explanation		Asking Questions		Answering Questions		Participating in Discussion		Completing Tasks Using Assemblr Edu		Expressing Opinions		Using Assemblr Edu Features Actively		Total Score
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
1																

Scoring guide

Yes = 1 No = 0

Maximum score per students 7

Appendix 3 "Explanation of Indicator Observation Checklist "

No.	Indikator Observasi	Explanation	Students Activeness Demension	Sources
1	Paying Attention to the Teacher's Explanation	Students demonstrate focus and visual engagement during instruction.	Visual & Mental Activity: Focusing attention, understanding the teacher's explanation, showing interest in the material.	Paul B. Diedrich in Nisak & Aisyah (2024): Visual activity includes observing, reading, and paying attention to instruction and demonstrations.
2	Asking Questions	Students initiate inquiries to clarify understanding.	Oral, Mental, & Emotional Activity: Curiosity, critical thinking skills, and the courage to express questions.	Karim & Karolina (2023): Asking questions is a sign of openness, curiosity, and initiative.
3	Answering Questions	Students respond verbally to teacher questions or peer discussions.	Oral & Cognitive Activity: Recalling, analyzing, and evaluating information to answer questions.	Sudjana in Prasetyo & Abduh (2021): Willingness to respond and engage in questioning reflects activeness.
4	Participating in Discussion	Students actively engage in pair/group discussions, sharing their thoughts.	Social, Oral, & Emotional Activity: Interacting, expressing opinions, and listening to others' ideas.	Bonwell & Eison (1991) and Karim & Karolina (2023): Participation in discussions builds higher-order thinking and communication.
5	Completing Tasks Using Assemblr Edu	Students are actively involved in completing assignments using AR features.	Motoric & Cognitive Activity: Completing digital tasks using the application as a form of active involvement in learning assignments.	Majid et al. (2023) and Anjali et al. (2024): Learning with Assemblr Edu encourages active exploration, task engagement, and critical thinking.

6	Expressing Opinions	Students share their views or reflections during class activities.	Oral & Emotional Activity: The courage to express attitudes, personal thoughts, values, and opinions in learning.	Muthmainnah (2019): Activeness includes expressing opinions and working collaboratively.
7	Using Assemblr Edu Features Actively	Students explore and interact with Assemblr Edu (3D/AR editor, scanning, animations, etc.).	Motoric & Technological Engagement: Using AR features, visualizations, and the app's interactivity as a form of digital engagement in learning.	Hasanah (2022) and Yasa et al. (2024): Engagement with technology indicates active, self-directed learning.

Appendix 4 "Students' Pre-test and Post-test Result "

No	Nama	Score			
		Pre-Test	Category	Post-Test	Category
1	Student 1	60	Fair	73	Good
2	Student 2	100	Very Good	93	Very Good
3	Student 3	73	Good	100	Very Good
4	Student 4	93	Very Good	93	Very Good
5	Student 5	53	Poor	100	Very Good
6	Student 6	93	Very Good	80	Good
7	Student 7	67	Fair	87	Very Good
8	Student 8	53	Poor	93	Very Good
9	Student 9	93	Very Good	100	Very Good
10	Student 10	67	Fair	53	Poor
11	Student 11	13	Poor	93	Very Good
12	Student 12	93	Very Good	93	Very Good
13	Student 13	53	Poor	87	Very Good
14	Student 14	27	Poor	93	Very Good
15	Student 15	87	Very Good	80	Good
16	Student 16	93	Very Good	93	Very Good
17	Student 17	40	Poor	100	Very Good
18	Student 18	47	Poor	93	Very Good
19	Student 19	87	Very Good	87	Very Good
20	Student 20	87	Very Good	100	Very Good
21	Student 21	87	Very Good	100	Very Good
22	Student 22	40	Poor	53	Poor
23	Student 23	27	Poor	40	Poor
24	Student 24	93	Very Good	100	Very Good
25	Student 25	80	Good	93	Very Good
26	Student 26	93	Very Good	93	Very Good
27	Student 27	80	Good	73	Good
28	Student 28	87	Very Good	87	Very Good
29	Student 29	47	Poor	93	Very Good
30	Student 30	80	Good	93	Very Good
31	Student 31	100	Very Good	93	Very Good
32	Student 32	73	Good	100	Very Good
33	Student 33	40	Poor	40	Poor
34	Student 34	73	Good	93	Very Good

Appendix 5 "Observation Result"

No	Nama	Indicators							Total Score	Categories
		Paying Attention to the Teacher's Explanation	Asking Questions	Answering Questions	Participating in Discussion	Expressing Opinions	Completing Tasks Using Assemblr Edu	Using Assemblr Edu Features Actively		
1	Student 1	✗	✗	✗	✗	✗	✓	✓	2	Less Active
2	Student 2	✓	✗	✓	✗	✓	✗	✓	4	Active
3	Student 3	✓	✓	✓	✓	✓	✓	✓	7	Very Active
4	Student 4	✓	✓	✗	✓	✗	✓	✓	5	Active
5	Student 5	✓	✗	✓	✓	✓	✓	✓	6	Very Active
6	Student 6	✗	✗	✗	✗	✗	✓	✓	2	Less Active
7	Student 7	✓	✓	✗	✓	✗	✓	✓	5	Active
8	Student 8	✓	✓	✓	✓	✓	✓	✓	7	Very Active
9	Student 9	✓	✓	✓	✓	✓	✓	✓	7	Very Active
10	Student 10	✗	✗	✗	✗	✗	✓	✓	2	Less Active
11	Student 11	✓	✓	✓	✓	✓	✓	✓	7	Very Active
12	Student 12	✓	✓	✓	✗	✗	✓	✓	5	Active
13	Student 13	✓	✓	✓	✓	✓	✓	✓	7	Very Active
14	Student 14	✓	✓	✓	✓	✓	✓	✓	7	Very Active
15	Student 15	✓	✓	✗	✗	✗	✗	✓	3	Less Active
16	Student 16	✓	✓	✓	✓	✓	✓	✓	7	Very Active
17	Student 17	✓	✓	✓	✓	✓	✓	✓	7	Very Active
18	Student 18	✓	✓	✓	✓	✗	✓	✓	6	Very Active
19	Student 19	✓	✓	✓	✓	✗	✓	✓	6	Very Active
20	Student 20	✓	✓	✓	✓	✓	✓	✓	7	Very Active
21	Student 21	✓	✓	✓	✓	✓	✓	✓	7	Very Active
22	Student 22	✗	✗	✗	✗	✗	✗	✗	0	Not Active
23	Student 23	✓	✗	✗	✗	✗	✗	✗	1	Not Active
24	Student 24	✓	✓	✓	✓	✓	✓	✓	7	Very Active
25	Student 25	✓	✓	✓	✓	✓	✓	✓	7	Very Active
26	Student 26	✓	✓	✓	✗	✗	✓	✓	5	Active
27	Student 27	✓	✓	✗	✗	✗	✓	✓	4	Active
28	Student 28	✓	✓	✗	✗	✗	✓	✓	4	Active
29	Student 29	✓	✓	✓	✓	✓	✓	✓	7	Very Active
30	Student 30	✓	✓	✓	✓	✓	✓	✓	7	Very Active
31	Student 31	✓	✓	✓	✗	✗	✓	✓	5	Active
32	Student 32	✓	✓	✓	✓	✓	✓	✓	7	Very Active
33	Student 33	✗	✗	✗	✗	✗	✗	✗	0	Not Active
34	Student 34	✓	✓	✓	✗	✗	✓	✓	5	Active

Appendix 6 "Students' Test and Observation Result "

No	Nama	Test		Score	Observation Checklist		Relation	Interpretation
		Pre-test	Post-test		Observation score (0-7)	Categories		
1	Students 1	60	73	13	2	Less Active	Convergent	Learning outcomes are sufficient, and activeness is low.
2	Students 2	100	93	-7	4	Active	Divergent	Very high learning outcomes, but activeness is low.
3	Students 3	73	100	27	7	Very Active	Convergent	High learning outcomes and also very active.
4	Students 4	93	93	0	5	Active	Complementary	Good learning outcomes and quite active.
5	Students 5	53	100	47	6	Very Active	Convergent	Very high learning outcomes and very active.
6	Students 6	93	80	-13	2	Less Active	Convergent	Low learning outcomes, consistent with low activeness.
7	Students 7	67	87	20	5	Active	Convergent	Good learning outcomes and quite active.
8	Students 8	53	93	40	7	Very Active	Convergent	High learning outcomes and very active.
9	Students 9	93	100	7	7	Very Active	Convergent	High activeness is consistently associated with high learning outcomes.
10	Students 10	67	53	-14	2	Less Active	Convergent	Low activeness is consistent with low outcomes.
11	Students 11	13	93	80	7	Very Active	Convergent	Very good learning outcomes and very active.
12	Students 12	93	93	0	5	Active	Convergent	Quite active, and learning outcomes are also good.
13	Students 13	53	87	34	7	Very Active	Convergent	Very active, in line with high learning outcomes.
14	Students 14	27	93	66	7	Very Active	Convergent	Very high activeness is consistent with high scores.
15	Students 15	87	80	-7	3	Less Active	Convergent	Low activeness and moderate learning outcomes.
16	Students 16	93	93	0	7	Very Active	Complementary	Very active and very good learning outcomes, but no improvement.
17	Students 17	40	100	60	7	Very Active	Convergent	High activeness is in line with high learning outcomes.
18	Students 18	47	93	46	6	Very Active	Convergent	High learning outcomes and also very active.
19	Students 19	87	87	0	6	Very Active	Complementary	High activeness but no improvement in learning outcomes.
20	Students 20	87	100	13	7	Very Active	Convergent	Very active and very high learning outcomes.
21	Students 21	87	100	13	7	Very Active	Convergent	High activeness is in line with high learning outcomes.
22	Students 22	40	53	13	0	Not Active	Convergent	Not active, and learning outcomes are also low.
23	Students 23	27	40	13	1	Not Active	Convergent	Almost not active, with low outcomes.
24	Students 24	93	100	7	7	Very Active	Convergent	Very active and very high learning outcomes.
25	Students 25	80	93	13	7	Very Active	Convergent	High activeness is consistent with high outcomes.
26	Students 26	93	93	0	5	Active	Complementary	Quite active but no improvement in learning outcomes
27	Students 27	80	73	-7	4	Active	Divergent	Quite active, but outcomes are moderate.
28	Students 28	87	87	0	4	Active	Complementary	Quite active but no improvement in learning outcomes
29	Students 29	47	93	46	7	Very Active	Convergent	Very active, and learning outcomes are high.
30	Students 30	80	93	13	7	Very Active	Convergent	High activeness is consistent with high outcomes.
31	Students 31	100	93	-7	5	Active	Divergent	Quite active but the learning outcomes is decrease
32	Students 32	73	100	27	7	Very Active	Convergent	Very active, with very good learning outcomes.
33	Students 33	40	40	0	0	Not Active	Convergent	Not active, and learning outcomes are also low.
34	Students 34	73	93	20	5	Active	Convergent	Quite active, with good learning outcomes.

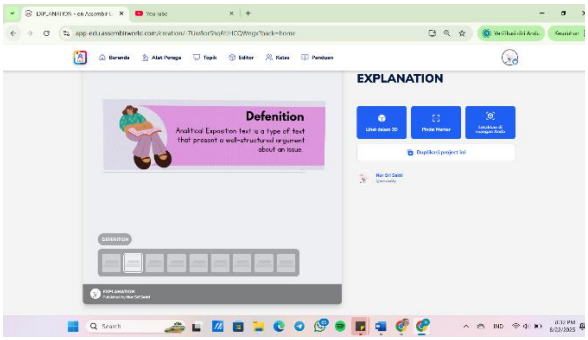
Appendix 7 “Teacher Note ”

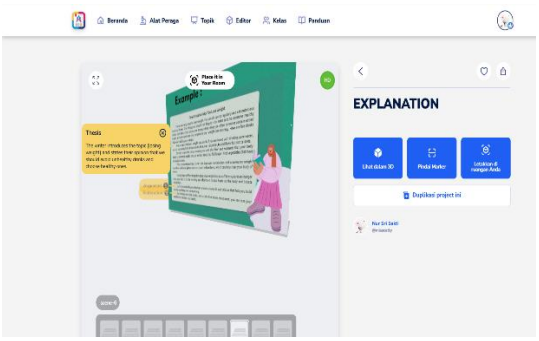
Indikator	Pertemuan 1	Pertemuan 2	Pertemuan 3
Paying Attention (PA)	Sebagian besar siswa memperhatikan penjelasan guru tentang cara menggunakan aplikasi Assemblr Edu	Sebagian besar siswa memperhatikan penjelasan guru tentang materi Analitical Exposition Text yang ada pada aplikasi ini	Hampir seluruh siswa focus pada penjelasan guru
Asking Questions (AQ)	Siswa aktif bertanya tentang cara penggunaan aplikasi ini	Mulai meningkat, sudah ada siswa bertanya terkait materi maupun cara penggunaan aplikasi ini	Lebih banyak siswa bertanya, rasa ingin tahu meningkat
Answering Questions (AN)	Hanya Sebagian siswa yang menjawab pertanyaan terbuka yang diberikan oleh guru	Beberapa siswa mulai menjawab pertanyaan yang diberikan oleh guru, meski belum merata	Lebih banyak siswa yang mulai menjawab pertanyaan yang diberikan
Participating in Discussion (PD)	Tidak ada siswa yang berpartisipasi dalam diskusi, belum ada pembagian kelompok	Beberapa siswa mulai melakukan diskusi bersama dengan teman sebangkunya	Lebih meningkat, siswa mulai melakukan group diskusi skala kecil bersama dengan teman-temannya baik tentang quiz maupun isi dari materi
Expressing Opinions (EO)	Tidak ada siswa yang menyampaikan pendapat	Hanya sedikit siswa yang berani mengemukakan pendapatnya tentang isi materi	Masih terendah, hanya sebagian kecil siswa yang berani memberikan opininya
Completing Tasks (CT)	Belum diberikan tugas/kuis	Sebagian besar siswa menyelesaikan tugas pada aplikasi ini	Hampir semua siswa berhasil menyelesaikan tugas/quis yang diberikan
Using AR Features (UF)	Siswa antusias mencoba menggunakan aplikasi Assemblr Edu ini.	Siswa sudah mulai dapat menggunakannya dengan mandiri	Hampir semua siswa dapat menggunakan aplikasi ini dengan mandiri

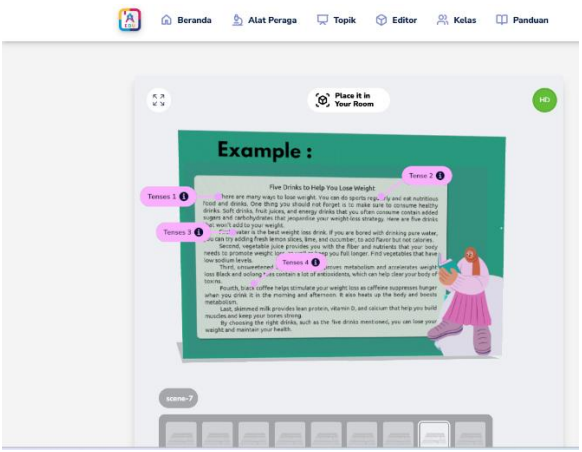
Appendix 8 "Students' Activeness Indicator"

Indicator Code	Indicator Description	F	%
PA	Paying Attention to the Teacher's Explanation	29	85%
AQ	Asking Questions	26	76%
AN	Answering Questions	23	68%
PD	Participating in Discussion	20	59%
EO	Expressing Opinions	17	50%
CT	Completing Tasks Using Assemblr Edu	29	85%
UF	Using Assemblr Edu Features Actively	31	91%

Appendix 9 “Assemblr Edu App ”



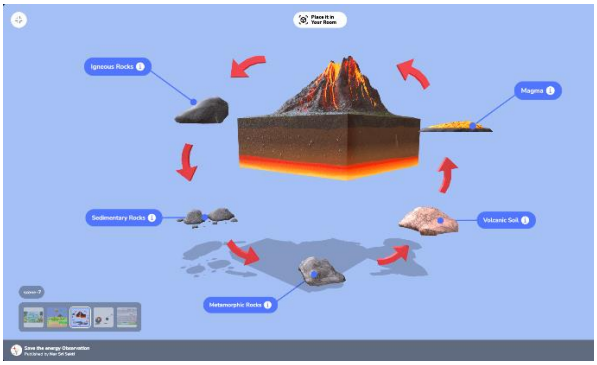




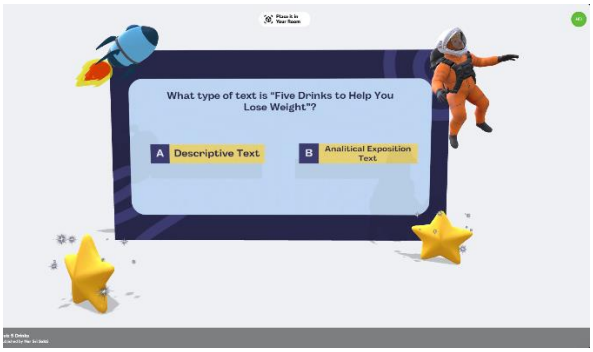







Igneous Rocks
Magma
Sedimentary Rocks
Volcanic Soil
Metamorphic Rocks


Quiz Time
Let's play!


What type of text is "Five Drinks to Help You Lose Weight"?
A Descriptive Text
B Analitical Exposition Text


A Descriptive Text
B Analitical Exposition Text
CORRECT

Appendix 10 “Documentations”

